

VOLUNTEER GUIDE FOR FAT DOG 120 IN 2019

VOLUNTEER GUIDE FOR FAT DOG 120 IN 2019	1
ABOUT THIS RACE	4
OUR GOALS FOR THIS RACE	4
DRIVING INSTRUCTIONS	4
HOW TO GET TO MANNING	4
Vancouver to E.C. Manning Park (about 2.5 hours depending on traffic)	4
Where to Stay	4
FREE CAMPING SITES FOR VOLUNTEERS	5
Headwaters Corral	5
Fire Hall at Eastgate.....	6
WINDY JOE'S CABIN AT THE RESORT.....	7
MAINTAINING CONTACT	8
Where We Are on Race Day	8
Aid Station Captains—Racer Progress.....	8
Radio Channels	8
TWO-WAY RADIO COMMUNICATION BASICS	9
Make a Call	9
Use the Language.....	9
4 Important Rules of Radio Communication	10
Emergency Calls	10
Memorize the Phonetic Alphabet.....	10
Basic Radio Etiquette Rules	11
Radio Check	11
Signal Reporting for Radio Check	11
Readability	11
Signal Strength	11
VOLUNTEER JOBS	12
Where Everyone Helps – Take Down.....	12
PARKING	12
PACKAGE PICKUP NOTES	12
SCHEDULE OF EVENTS FOR 2019 (UPDATED AUG 2)	13
Shuttles.....	14
MANDATORY RACER AND PACER GEAR.....	14
AID STATION GENERAL INFORMATION.....	15
Food Storage for the Race	15
How to Get Your Aid Station Supplies.....	15
What Racers Want To Know	15
Pacers (120 and 70 Mile Only)	15
Checking In and Out MANDATORY	15
Conversion 12-Hour and 24-Hour Clock.....	15
Relay.....	16
Headlamp and Batteries.....	17
Dropping Out (IMPORTANT SAFETY PRACTICE)	17
Catnap	17
Cutoff and Drop Bag Locations	17
120 Mile Target Times and Cutoff (Revised Aug 2)	17
Target Times and Cutoff 70 Mile Event	18
50 mile Notes	19
40 Mile Notes	20
Other Water Sources	20
Safety.....	20

Attitude.....	20
Signage.....	20
Weigh Scales.....	21
Sumptuous Food.....	21
Hygiene and Serving Food.....	21
Water and Electrolyte Drink.....	21
Lighting.....	22
Music.....	22
Generators and Inverters.....	22
Gear to Bring.....	22
Take Care of Yourself (remember to eat!).....	23
Garbage.....	23
Outhouses.....	23
Take Down.....	23
AID STATION TYPICAL SUPPLIES.....	24
AID STATION LOCATIONS.....	26
How to Navigate Water Bars on Forest Service Roads.....	26
Driving Instructions.....	26
Bonnevier Race Start (Hwy #3).....	27
Getting to Start Location.....	27
Heather Aid Station (top of Bonnevier Trail).....	28
Getting to Aid Station Location.....	28
Blackwall Peak.....	29
Getting to Aid Station Location.....	29
Nicomen Lake Aid Station.....	29
Getting to Aid Stn Location.....	30
Cayuse Flats Aid Station (Hwy #3).....	31
Getting to Aid Stn Location.....	31
Cascade Aid Station (Hwy #3).....	32
Getting to Aid Stn Location.....	32
Whitecloud Aid Station.....	33
Getting to Aid Stn Location from Hope.....	33
Coming Back Out.....	33
Tulameen Camp (access off Tulameen River FSR).....	35
Getting to Aid Stn Location from Hope.....	35
Dick's Cabin (Whipsaw Jeep Road) Volunteers Only; Relay Hike In.....	37
Getting there from Manning Park.....	37
Getting there from Princeton.....	37
Follow Whipsaw Jeep Road to Dick's Cabin.....	37
Racers Take Hope Pass Connector after Leaving Dick's Cabin.....	38
Returning to Manning.....	38
Frosty Mountain Aid Station.....	39
Getting to Aid Stn Location.....	39
Tom's Bench Aid Station.....	40
Getting to Aid Stn Location.....	40
Strawberry Flats Aid Station.....	41
Getting to Aid Stn Location.....	41
Finish Line Aid Station (Lightning Lake).....	42
Getting to Aid Stn Location.....	42
Fast First Finisher Times for Each Event.....	42
OVERFLOW PARKING.....	42
SWEEPS.....	42
RACERS WHO GO OFF COURSE.....	43

RACER CARE	43
EMERGENCY NUMBERS.....	44
HIGHWAY CROSSINGS AND RESTRICTIONS.....	45
APPRECIATION	46
LIGHTNING LAKE FINISH LINE.....	46
AWARDS.....	46
FIRST AID	47
Basic First Aid.....	47
FLUID AND ELECTROLYTES 101: RECOMMENDATIONS FROM THE MEDICAL TENT BY LISA	
BLISS MD.....	50
My weight is down and I feel fine.....	50
My weight is down and I'm puking? How can I stop puking?	50
My weight is up and I feel fine	51
My weight is up and I feel horrible!	52
My weight is up and I can't pee	52
How much salt should I take and how can I monitor it?	52
I'm getting muscle cramps.....	53
Will I know if I am getting heat stroke?	53
What if I get dizzy when I stop running?	54
What if I get dizzy and lightheaded when I'm running or walking?	54
Peer pressure	55
Swelling	55
Spitting.....	55
Renal Failure.....	55
Final comments.....	55
RECIPES.....	56
Soya Potatoes	56
WEBSITE LINKS	56

ABOUT THIS RACE

- This is an endurance race covering remote trails through BC Parks.
- This race is challenging and difficult for racers.
- The race is continuous; they do not sleep unless they take a catnap beside an aid station.
- While doing endurance runs, racers may **not** think rationally so if they do not have a crew, you need to think for them. For example, asking them if you can refill their water.
- Finish rates for 120 milers for this race has been 40-60%.
- Finish rate for 70, 50 and 40 mile racers has been 70-100%.
- Finish rate for relay teams is 100%.
- There are known hazards and racers are aware of them, for example there may be bears on the trail, if a headlamp burns out, they will be running in the dark, it will be cold at night, they may fall and hurt themselves.
- There are cutoff times and if racers do not meet those times, they are asked to leave the race. We will be enforcing cutoff.

OUR GOALS FOR THIS RACE

- Well-marked trails.
- Superior aid stations with friendly volunteers and good food.
- We take good care of racers.
- Safety is essential. See Emergency Response Plan in the Volunteer binder.

DRIVING INSTRUCTIONS

[Crew and Relay Team Driving Instructions](#)

HOW TO GET TO MANNING

Vancouver to E.C. Manning Park (about 2.5 hours depending on traffic)

- Take Hwy #1 toward Hope. Allow 2 hours (at non-rush hour!).
- Take Hwy #3 turnoff (**Crowsnest Hwy**) toward **Princeton**. Speed limit 60-80 km/h.
- Arrive at Manning Park Lodge in about 35 minutes from Hope.



Where to Stay

- Headwaters Corral campground is **free** for volunteers. It is on the road toward Lightning Lake. If that is full, we also have a field beside the Eastgate fire hall 15 minutes toward Princeton.
- Lightning Lake, Hampton, Coldspring, Mule Deer Campground.
- Sunshine Valley.
- Manning Park Resort (rooms or cabins) are usually booked by racers.

- Manning Eastgate Motel.
- Any Hope motel (45 minutes away). Any Princeton motel (40 minutes away).

FREE CAMPING SITES FOR VOLUNTEERS

Headwaters Corral

Take the road to Lightning Lake behind the resort. The corral is on your left.



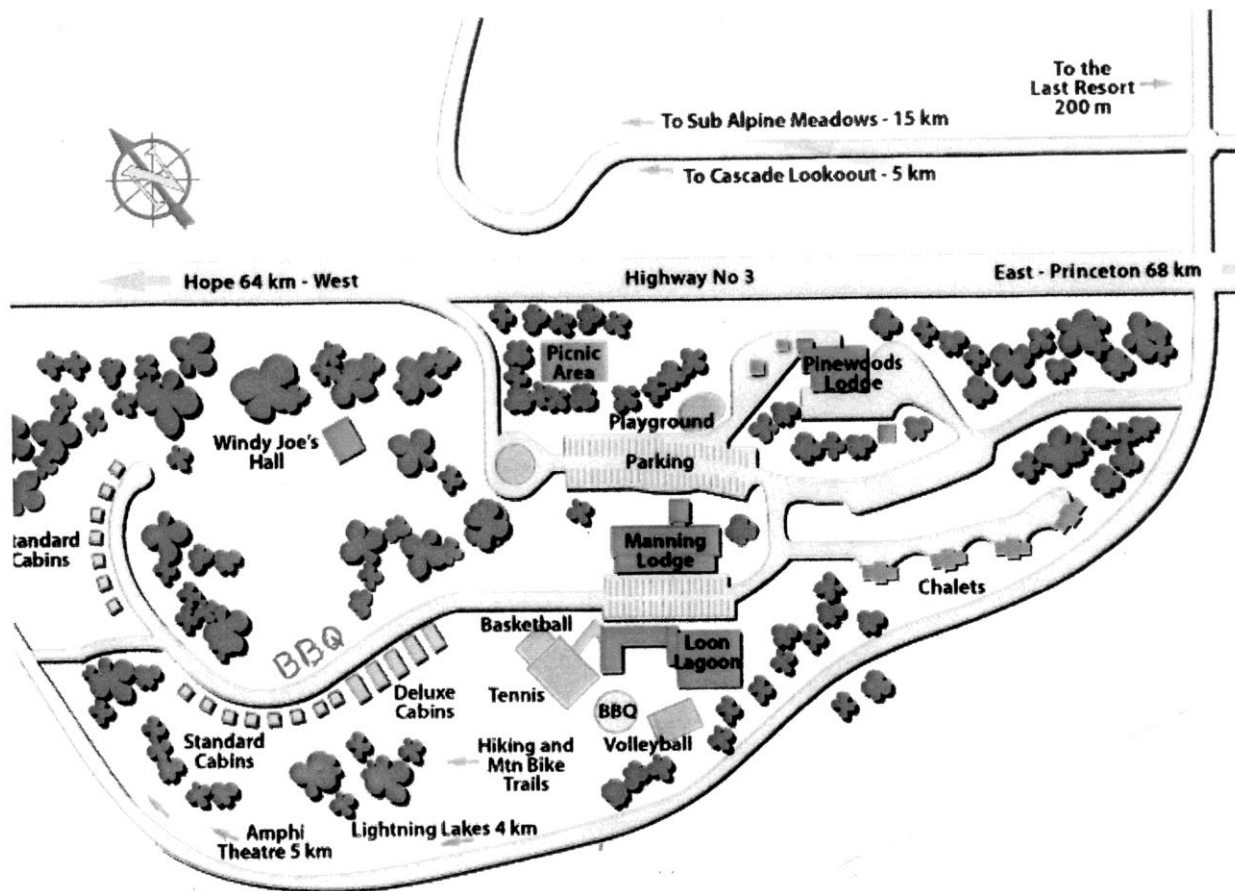
Fire Hall at Eastgate

Take Highway 3 and head toward Princeton. At the Esso gas station, watch for next right turn onto Towers Road. At T-junction, turn right and the fire hall is on your right. Park in the field to the left of the hall. Outhouse available.

Make sure you don't block the driveway.



WINDY JOE'S CABIN AT THE RESORT



MAINTAINING CONTACT

- Radios, satellite phones and InReach devices synched up with cell phones will be used to communicate.
- Cell phones may work at east end of Manning Park but don't count on them.
- If you cannot find one of us, leave a message at reception at Manning Park Lodge.
- Keep one car available for communication and emergency transportation.

Where We Are on Race Day

VIP	Race Day	Lodging
Heather Macdonald, RD	Keremeos then Manning Park/ Finish Line at Lightning Lake	Eastgate, 250-840-8800 Cell: 604-313-7621
Erik Bird, Assistant RD	Manning Park	Eastgate, 250-840-8800 Cell: 604-961-7166
Suzanne Hood	Communications	Eastgate, 250-840-8800 Cell: 604-317-3378
Mike Thomas	Communications	Cell: 778-242-9830

Aid Station Captains—Racer Progress

- Send updates to Course Captain every 2 hours **after first racer comes through and until sweep arrives.**
- Report any racer DROPS immediately to Course Captain.
- *We need to know last known time of all runners through aid station and DNF immediately.*
- Drop off timing sheets at finish line when your aid station closes down.
- Return radio equipment to finish line.

Radio Channels

Channel 2=radio to radio, use this first, best in close proximity, or clear sightline.

Channel 1=BC Parks Repeater, best if you have sightline to Blackwall Peak. Use sparingly. In a real emergency, stay off this channel.

Problems? Try both channels.

TWO-WAY RADIO COMMUNICATION BASICS

Make a Call

1. Listen to ensure the channel is clear for you.
2. **Press and hold the Push-To-Talk (PTT)** button.
3. After 2 seconds: say **recipient's** call sign twice followed by "THIS IS" *your call sign*.
4. Once the person replies **convey your message**.

Example

You:	"Calcite Kelley, Calcite Kelley, This is Ashnola Dwayne, Come in, Over"
Recipient:	"Ashnola Dwayne, This is Calcite Kelley, Go Ahead, Over"
You:	Say your message and then say: "Over"
Recipient:	"Roger Wilco, Over"
You:	"This is Ashnola Dwayne, Over and Out"

Use the Language

Term	Meaning
Affirmative	Yes. Avoid "yup" or "nope" as they are difficult to hear.
Break, Break, Break	You are interrupting in the middle of communication because you have an emergency.
Come in	You are asking the other party to acknowledge you.
Copy	You understand what was said.
Disregard	Ignore transmission.
Emergency Emergency	Only use when grave or imminent danger to life.
Figures	Numbers to follow
Go Ahead	You are ready to receive transmission.
Negative	No.
Over	Your message is finished. Invitation to other person to transmit.
Over and Out	You've finished talking and you are signing off.
Radio Check	What is my signal strength? Can you hear me?
Read you loud and clear	Response to Radio Check. Means your signal is good. Also "Read you 5-by-5".
Repeat	Use before you repeat something. Example " <i>I need 9, repeat 9 litres of water. Over.</i> "
Roger (or Ten Four)	Message received and understood.
Say Again	Re-transmit your message.
Stand-by	You acknowledge the other party, but are unable to respond immediately.
Wilco	Okay, I will comply.
Wrong	Indicates an error has been made and message will be repeated.

4 Important Rules of Radio Communication

1.	Clarity:	Use a clear voice. Speak a little slower than normal. Speak in a normal tone, do not shout.
2.	Simplicity:	Keep your message simple enough for intended listeners to understand.
3.	Brevity:	Be precise and to the point.
4.	Security:	Do not transmit confidential information on a radio unless you know the proper security technology is in place. Remember, frequencies are shared; you do not have exclusive use of the frequency.

Emergency Calls

If you have an emergency message and need to interrupt others' conversations:

- Wait and listen until you hear "Over".
- Press PTT and say "BREAK, BREAK, BREAK, *your call sign*, I have emergency message for (*recipient's call sign*), Do you copy? Over".

Memorize the Phonetic Alphabet

At some point you will need to use the phonetic alphabet in your conversation. This will make sure that letters such as 'F' are not misinterpreted as 'S', 'T' as 'C', or 'M' as 'N'.

	Phonetic	Spoken As		Phonetic	Spoken As
A	Alpha	AL FAH	N	November	NO VEM BER
B	Bravo	BRAH VOH	O	Oscar	OSS CAH
C	Charlie	CHAR LEE	P	Papa	PAH PAH
D	Delta	DELL TAH	Q	Quebec	KEH BECK
E	Echo	ECK OH	R	Romeo	ROW ME OH
F	Foxtrot	FOXS TROT	S	Sierra	SEE AIR RAH
G	Golf	GOLF	T	Tango	TANG GO
H	Hotel	HOH TELL	U	Uniform	YOU NEE FORM
I	India	IN DEE AH	V	Victor	VIC TAH
J	Juliet	JEW LEE ETT	W	Whiskey	WISS KEY
K	Kilo	KEY LOH	X	X-ray	ECKS RAY
L	Lima	LEE MAH	Y	Yankee	YANK KEY
M	Mike	MIKE	Z	Zulu	ZOO LOO

Basic Radio Etiquette Rules

- When using a two-way radio **you cannot speak and listen at the same time**, as you can with a phone.
- **Don't interrupt** if you hear other people talking. Wait until their conversation is finished unless it is an emergency. If it is an emergency, inform the other parties that you have an urgent emergency message (see Emergency Calls below).
- **Do not respond if you aren't sure the call is for you.** Wait until you hear your call sign to respond.
- **Never transmit sensitive, confidential, financial or military information.** Unless you are certain your conversations are secured with the proper level of encryption for the level of sensitivity, assume your conversations can be heard by others.
- **Perform radio checks to ensure your radio is in good working condition.**
- Memorize the call signs and locations of persons and radio stations you will communicate with. Everybody has a unique call sign based on location such as Calcite Kelley.
- **Think before you speak.** Decide what you are going to say and who needs to hear it.

Radio Check

- Ensure the battery is charged and the **POWER IS ON.**
- Keep the volume high enough to be able to hear calls.
- Regularly make radio checks to make sure everything is working and that you are still in range to receive signals.
- Say "Radio Check: What is my signal strength? Can you hear me?"

Signal Reporting for Radio Check

Whenever an initial radio check call is made, the receiving station needs to inform the other station making the request how the receiving signal is being heard. To do this the following scale should be used.

Readability

1. Unreadable.
2. Barely readable some words now and then.
3. Readable with considerable difficulty.
4. Readable with practically no difficulty
5. Perfectly readable (Loud & Clear)

Signal Strength

1. Faint
2. Weak
3. Fair
4. Good
5. Strong

VOLUNTEER JOBS

Because this race travels point to point and takes two days, there are lots of jobs to do. After you have slept, we would love it if you could help with another job; please check with the Volunteer Coordinator.

Race weekend jobs include: aid stations, marshalls, first aid, sweeps, finish line help, clean up, timing, photographers, videographers, gopher (with car).

Before race weekend, jobs include trail clearing and flagging.

Where Everyone Helps – Take Down

Take down of the finish is where we need everyone to help out. Tents and equipment need to be packed into vehicles. The end of the race is the time when we are most tired but that is an important time to efficiently close down so that BC Parks will let us come back again. IF YOU WERE UP ALL NIGHT, only do it if you have energy!

PARKING

Parking at all BC Parks is FREE! Volunteers can park at Lightning Lake.

Racers park at **overflow lot** at the ski hill if they are not staying at the lodge. We will shuttle racers from finish to overflow and lodge parking.

PACKAGE PICKUP NOTES

They receive bib number, pins, shirt, plus inserts. Check spreadsheet for any missing information like proof of maintenance.

Racers CANNOT participate without proof of trail maintenance, a volunteer on race weekend or \$65 donation.

Volunteer takes Polaroid photo of racer head and bib number. The name on the bib must be **VISIBLE** in the photo. We make a magnet from this to track at finish. (You can make backup copies with a camera but that process takes a lot longer to do.)



Relay teams: Captain or designate picks up all bibs unless noted otherwise. Captain or relay team member must pass along safety guidelines to others if they are not at briefing.

Racers who registered by posted deadline date (end of May) get the shirt size they requested. After that, size is not guaranteed. There will be extra shirt sizes listed on the shirt lists. Also, there may be shirts from previous years available.

Record time using 24-hour clock on sheets provided.

120 mile = 100 series

70 mile = 700 series

50 mile = 500 series

40 mile = 400 series

Relay = R1-1, R1-2

SCHEDULE OF EVENTS FOR 2019 (UPDATED AUG 2)

Note: 120 Mile and relay briefing is now at 4 pm. Awards for 120 mile, relay and 70 mile at 11 am.

Date	Time	Event	Activity	Location
Thurs Aug 8	10-3 pm	120 mile, relay leg 1-3	Bag drop and package pickup at Manning Park.	Tamarack Room in lodge
	4:00 pm	120 mile, relay leg 1-3	Mandatory briefing at Manning Park Lodge. Sign in.	Alpine Room
	6 pm	all	Optional pasta dinner at Manning Park Lodge	Cascade Room
Fri Aug 9	8:30 am	120 mile	Buses depart overflow lots and go to lodge.	Overflow lots
	9 am	120 mile	Buses depart Manning Park Lodge to go to Bonnevier start.	Lodge
	10 am	120 mile, relay leg 1	Race starts at base of Bonnevier. Sign in.	Eastgate Road
	2-7 pm	70, 50, 40 mile	Bag drop at Manning Park Lodge.	Tamarack Room in lodge
	4-7 pm	70, 50, 40 mile, relay	Package pickup In Manning Park Lodge.	Tamarack Room in lodge
	7 pm	70, 50, 40 mile, relay	Mandatory briefing Manning Park Lodge. Sign in.	Tamarack Room in lodge
Sat Aug 10	5:30 am	70 mile	Bus departs overflow lots to go to lodge.	Overflow lots
	6 am	70 mile	Bus departs Manning Park Lodge parking lot to get to start location at Cayuse Flats at Hwy #3.	Lodge parking
	7 am	70 mile	70 mile race starts at Cayuse Flats . Sign in.	Cayuse Flats
	7:30 am	50 mile	Bus departs overflow lots to go to lodge.	Overflow lots
	8 am	50 mile	Bus departs Manning Park Lodge parking lot to go along Hwy #3 to Cascade start area.	Lodge parking
	9 am	50 mile	50 mile race starts at Cascade at Hwy #3. Sign in.	Cascade
	8:30 am	40 mile	Bus departs overflow lots to go to lodge.	Overflow lots
	9 am	40 mile	Bus departs Manning Park Lodge parking lot to go along Hwy #3 to Cascade start area.	Lodge parking
	10 am	40 mile	40 mile race starts at Cascade at Hwy #3. Sign in.	Cascade
Sun Aug 11	5 am	40 mile	40 mile race ends (17 hours).	Lightning Lake
	5 am	50 mile	50 mile race ends (20 hours).	Lightning Lake
	9 am	50, 40 mile	AWARDS for 50 and 40 mile.	Lightning Lake
	11 am	120 and 70 mile, relay	Race ends for 120 mile and relay (49 hours), 70 mile (27 hours). AWARDS for 120, 70 and relay.	Lightning Lake
	noon	All	Pick up your drop bags.	Finish Line tents

Note that the entire route is in Manning Park for 2019. No activities will take place in Princeton or Keremeos.

Shuttles

Shuttles from Finish Line: There will be a shuttle bus during the daytime (about every 90 minutes) and shuttle car drivers at night to take you from the finish to the lodge or overflow parking. See shuttle board at Lightning Lake.

MANDATORY RACER AND PACER GEAR

There can be wild swings in temperature in the mountains; you need to be prepared for hot and cold.

Racers MUST carry the following supplies; samples are linked but any brand name can be chosen.

- [Personal cup](#) (or bottle), to be used at all aid stations for beverages and food.
- Minimum of 2 litres of fluids with you at all times. Three-litre bladder recommended.
- Two lighting sources, such as headlamp and hand torch, both in working condition. Bring spare batteries for your lights. Headlamp example [Silva Trail Runner](#)
Hand torch such as [Fenixtactical](#).
- Two survival blankets or one bivvy.
- Whistle attached to outside of pack or clothing.
- Extra food in reserve, have fuel, drink powder.
- Waterproof jacket with taped seams and hood; no soft shell sections to jacket. See [Distance Runwear](#) samples linked here.
- Long running trousers or leggings or a combination of leggings and long socks which cover the legs completely (optional waterproof pants; depends on forecast in our opinion).
- Additional midlayer clothing (one heavier, warmer piece or two lighter pieces). One thermal jacket or two long-sleeved shirts.
- Cap or bandana.
- Warm hat and gloves.
- If you don't have crew, **carry your car key in your pack** in case you have to drop out.

We also recommend:

- Sunscreen and lip balm.
- Extra pair of socks in your pack.
- Change of shoes. (120 milers recommend change at Bonnevier and Skyline.)
- 1 tensor bandage compression bandage for sprains or injuries needing compression.
- Your drop bag at Bonnevier and Skyline II has fuel and electrolytes for the home stretch; Camp Mowich is a minor aid station and there is one other minor aid station at Skyline 1 (Sky Junction) before the finish.
- Use water treatment container like Lifestraw (or pills) if you plan to use streams for water.
- Bugspray.
- Moleskin, bandaids, duct tape.
- Vaseline.
- Bear spray, airhorn or whistle if you are concerned about bears.
- Finish line warm clothes packed in waterproof bag (you can insert your clothes in a garbage bag and insert that in your drop bag to keep it waterproof).

AID STATION GENERAL INFORMATION

Each aid station needs 2 types of crews: one to record racer time and one to take care of racers.

Food Storage for the Race

We are using facilities at Windy Joes to store perishables before the race.

How to Get Your Aid Station Supplies

Your aid station supplies will be in **Windy Joe's** or delivered to your station by van. See your setup time on the volunteer spreadsheet.

What Racers Want To Know

They will want to know how far it is to the next aid station and what is the terrain, for example, is it a climb? *Put out the sign* that explains the distance and terrain (in the aid station supplies).

Pacers (120 and 70 Mile Only)

- MUST check in at the aid station and provide name and bib number and who they are pacing.
- Must be wearing a pacer bib.
- Must have mandatory gear.
- Can join 120 mile racers at Cascade, Blackwall Peak, Frosty or Strawberry Flats.
- Can join 70 mile racers at Blackwall Peak or Frosty.
- Running at night must have headlamp or other light source.
- We need to track pacers as well as racers so make sure you get their names.

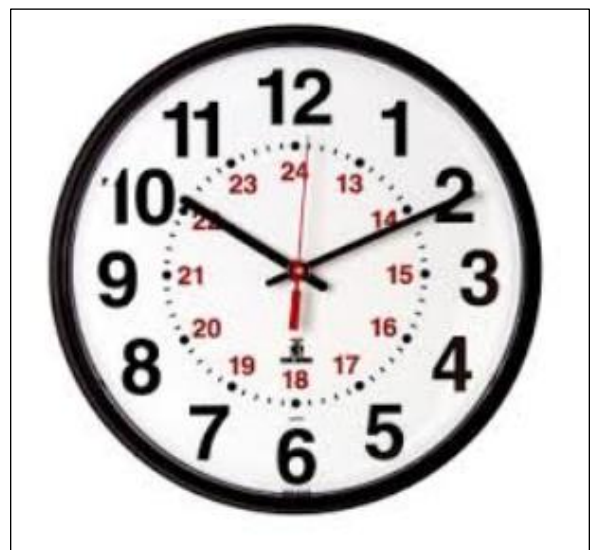
Checking In and Out MANDATORY

You must have at least one person recording the **TIME** that a racer is checking and when that racer checks out of the station. When checking in, yell out the bib number so that the person getting the drop bag can set it out ready.

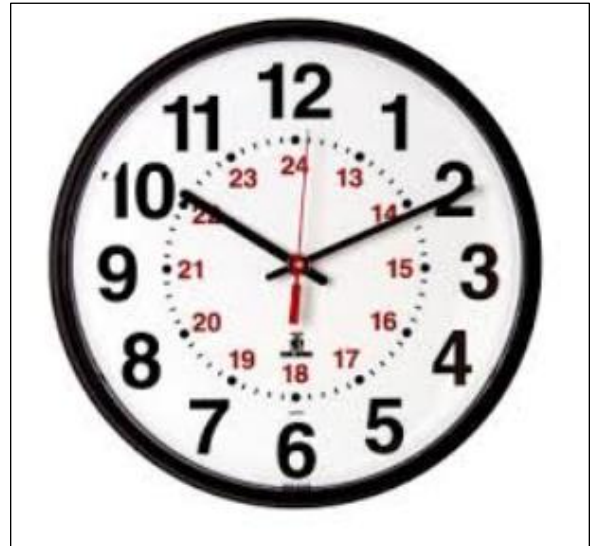
Record time in **24-hour clock** on spreadsheets provided. See conversion here.

Conversion 12-Hour and 24-Hour Clock

24-hour clock	12-hour clock
00:00	12:00 a.m.* midnight (start of day)
01:00	1:00 a.m.
02:00	2:00 a.m.
03:00	3:00 a.m.
04:00	4:00 a.m.
05:00	5:00 a.m.
06:00	6:00 a.m.
07:00	7:00 a.m.
08:00	8:00 a.m.
09:00	9:00 a.m.



24-hour clock	12-hour clock
10:00	10:00 a.m.
11:00	11:00 a.m.
12:00	12:00 p.m.* noon
13:00	1:00 p.m.
14:00	2:00 p.m.
15:00	3:00 p.m.
16:00	4:00 p.m.
17:00	5:00 p.m.
18:00	6:00 p.m.
19:00	7:00 p.m.
20:00	8:00 p.m.
21:00	9:00 p.m.
22:00	10:00 p.m.
23:00	11:00 p.m.
24:00	(midnight)* (end of day)



Relay

- Relay exchange can only be done at designated aid stations marked as relay exchange.
- A relay runner MAY be doing MORE than one leg and can substitute for each other.
- A relay runner can have a pacer if there are issues with running at night.

Leg	Distance	From	Interchange
Leg 1 Bonnevier	25.5 km 16 mi	Start	Blackwall Peak
Leg 2 Heather	37.5 km 23 mi	Blackwall Peak	Cayuse Flats
Leg 3 Skagit Bluffs	7 km 4 mi	Cayuse	Cascade
Leg 4 Paradise Valley	23 km 14 mi	Cascade	Whitecloud
Leg 5 Dewdney-Dick	24 km 15 mi	Whitecloud	Dick's Cabin
Leg 6 Nicomen-Heather	30.5 km 19 mi	Dick's Cabin	Blackwall Peak

Leg	Distance	From	Interchange
Leg 7 Blackwall	14.5 km 9 mi	Blackwall Peak	Frosty
Leg 8 Frosty	24 km 15 mi	Frosty	Tom's Bench
Leg 9 Skyline	21 km 13 mi	Tom's Bench	Strawberry Flats or Finish

Headlamp and Batteries

All racers are required to carry a light source such as headlamp plus batteries and extra bulb. They may have extra batteries packed in a drop bag until they are needed.

Dropping Out (IMPORTANT SAFETY PRACTICE)

Racers MUST inform an AID STATION CAPTAIN if they need to drop out. **YOU** must relay that information to a **person with a RADIO** so that we know what happened. We need the full name, bib number and reason for dropping. If the racer has no crew available for transport, then that racer may have to wait until the aid station is closed down.

We spent many hours in 2012 looking for a racer who had already been transported home.

Catnap

Racers can take a catnap beside an aid station. They can nap in a vehicle at an aid station as long as it is not moving. Crews should provide whatever the racer needs for sleeping (such as mats). Aid station tents should not be used for napping.

Cutoff and Drop Bag Locations

When asked to drop out, racers must comply with decision.

120 Mile Target Times and Cutoff (**Revised Aug 2**)

Total time = 49 hours.

#	Station	120 mile Distance So Far	Target (T), Cutoff (C)	Location and Notes	Major or Minor	Crew Access	Drop Bag
#1	Heather	16 km 10 mi		Bonnevier top, 2 km from Heather junction.	Minor	NO	NO
#2	Nicomen Lake	33.4 km 21 mi		Aid stn at Nicomen Lake hut. Hiking only access.	Minor	NO	NO
#3	Cayuse Flats	50.4 km 31 mi	T 22:00 pm Fri	Hope Pass at Hwy #3. Parking.	MAJOR	YES	YES
#4	Cascade	56 km 35 mi	C Fri midnight	Cascade sign at Hwy #3. Parking.	MAJOR	YES	YES
#5	Whitecloud	78 km 49 mi		Tulameen FSR at 51.2 km marker (outside of Hope, BC, one hour on	MAJOR	YES	YES

#	Station	120 mile Distance So Far	Target (T), Cutoff (C)	Location and Notes	Major or Minor	Crew Access	Drop Bag
				FSR).			
#6	Tulameen Camp	84.6 km 53 mi		Dewdney Trail 16 km up from Cascade. No vehicle access.	Minor	NO	NO
#7	Dick's Cabin	102.6 km 64 mi	T 11:00 am Sat	Whipsaw Jeep Road near junction Hope Pass Trail. No crew access.	MAJOR	Relay Only	YES
#8	Nicomen Lake x2	114.4 km 71 mi		Aid stn at Nicomen Lake hut. Hiking only access.	Minor	NO	NO
#9	Blackwall Peak	140.7 km 87 mi	C 21:00 pm Sat	Aid stn on Blackwall Peak Road near top. Parking.	MAJOR	YES	YES
#10	Frosty	151.2 km 94 mi	C midnight Sat	Windy Joe Trailhead at resort road on way to Lightning Lake. Parking.	MAJOR	YES	YES
#11	Tom's Bench	174.8 km 109 mi	T 5:30 am Sun	Frosty Mtn Trail at Lightning Lake. Hiking only access.	Minor	NO	NO
#12	Strawberry Flats	181 km 112 mi	C 7:00 am Sun	Strawberry Flats warming hut on road to ski hill past turnoff to Lightning Lake. Parking.	MAJOR	YES	YES
	Finish	195.7 km 121.6 mi	C 11 am Sun	Lightning Lake			

Target Times and Cutoff 70 Mile Event

Start time 7 a.m. Saturday at Cayuse Flats parking lot. Outhouses available.

#	Station	70 mile Distance So Far	Target (T), Cutoff (C)	Location and Notes	Major or Minor	Crew Access	Drop Bag
#1	Cascade	5.5 km 3.4 mi		Cascade sign at Hwy #3. Parking.	MAJOR	YES	YES
#2	Tulameen Camp	21 km 13 mi		Dewdney Trail 16 km up from Cascade. No vehicle access.	Minor	NO	NO
#3	Dick's Cabin	39 km 24 mi	T 16:00 pm Sat	Whipsaw Jeep Road near junction Hope Pass Trail. No crew access.	MAJOR	NO	YES
#4	Nicomen Lake	54 km 33 mi		Aid stn at Nicomen Lake hut. Hiking only access.	Minor	NO	NO
#5	Blackwall Peak	80.3 km 50 mi	C 2 am Sat	Aid stn on Blackwall Peak Road near top. Parking.	MAJOR	YES	YES
#6	Frosty	90.8 km	C 4:30 am	Windy Joe Trailhead at resort road	MAJOR	YES	YES

#	Station	70 mile Distance So Far	Target (T), Cutoff (C)	Location and Notes	Major or Minor	Crew Access	Drop Bag
		56 mi	Sun	on way to Lightning Lake. Parking.			
#7	Tom's Bench	109 km 68 mi		Frosty Mtn Trail at Lightning Lake. Hiking only access.	Minor	NO	NO
	Finish	111.4 km 69 mi	C 10 am Sun	Lightning Lake			

Total time = 27 hours.

50 mile Notes

Start time 9:00 am Saturday.

Total time = 20 hours.

#	Station	50 mile Distance So Far	Target (T), Cutoff (C)	Location and Notes	Major or Minor	Crew Access	Drop Bag
#1	Tulameen Camp	15.4 km 10 mi		Dewdney Trail 16 km up from Cascade. No vehicle access.	Minor	NO	NO
#2	Dick's Cabin	33.4 km 21 mi	T 17:00 pm Sat	Whipsaw Jeep Road near junction Hope Pass Trail. No crew access.	MAJOR	NO	YES
#3	Nicomen Lake	45.2 km 28 mi		Aid stn at Nicomen Lake hut. Hiking only access.	Minor	NO	NO
#4	Blackwall Peak	71.5 km 44 mi	C 03:00 am Sun	Aid stn on Blackwall Peak Road near top. Parking.	MAJOR	YES	YES
#5	Frosty	82 km 51 mi		Windy Joe Trailhead at resort road on way to Lightning Lake. Parking.	MAJOR	YES	YES
	Finish	84 km 52.5 mi	C 6:30 am Sun	Lightning Lake			

40 Mile Notes

This race starts at 10:00 am on Saturday.

#	Station	40 mile Distance run	Cutoff	Location and Notes	Major or Minor	Crew Access	Drop Bag
#1	Cayuse Flats	5.5 km 3.4 mi		Cayuse Flats near Hwy #3. Parking.	MAJOR	No	No
#2	Nicomen Lake	22.5 km 14 mi		Aid stn at Nicomen Lake hut. Hiking only access.	Minor	No	No
#3	Blackwall Peak	48.8 km 30 mi	C 22:00 pm Sat	Aid stn on Blackwall Peak Road near top. Parking.	MAJOR	YES	YES
#4	Frosty	59.3 km 37 mi		Windy Joe Trailhead at resort road on way to Lightning Lake. Parking.	MAJOR	YES	YES
	Finish	61.3 km 38 mi	C 5 am Sun				

Total time = 17 hours.

Other Water Sources

There are creeks, such as Grainger Creek between Heather and Cayuse Flats aid stations. They can refill but we recommend using water purifier tablets or Pristine drops or Lifestraw.

Safety

If at any time you are concerned about the safety of a racer and the safety of others due to a racer's behaviour, you may escort that person off the course.

Attitude

Long distance running can bring out cranky behaviour especially if racers are having a bad day. They must not treat you with disrespect or they can be disqualified. Don't take any shit from them. Keep calm and be firm; imagine that this person is a friend that you care about.

"I wanted to send a quick note thanking you and all of the fantastic volunteers for a terrific weekend. I thoroughly enjoyed the race and all of the care and preparation put into the race was noticed and well appreciated!! All of the volunteers at all times were very accommodating, it is hard to find the words to adequately show my appreciation but at all times before, during and after the race the kindness of everyone was heartening!! There were so many people that I talked with and helped me out that I could go on and on about the wonderful care that was provided.

Well Done!!! Angela Barbera

"The aid stations and volunteers were fantastic. Friendly, helpful, caring, above and beyond my experience at any other run. It was like having family look after me. And someone managed to keep my wife calm at the finish line when I was overdue."

Signage

Event Signage Display event signage in a location that will help crew find the location but it should not be on the highway. Event signage has the name of the race on it.

Race in Progress Race in progress signage is permitted on the highway on both sides of entry to highway, or crossing. See *Highway Crossings and Restrictions* on page 45.

Amber Beacons	Beacons are needed at night and should be placed so that approaching traffic can see them, such as before and after Cascades road crossing and before Sumallo Grove (coming from the west).
Distance	Aid stations will be given signage that indicates how far to next aid station.
No Parking	Temporary no parking signs need to be set up at some aid stations to block crews from parking on one side but allow parking on the other side: Ashnola River Road, Bonnevier, Shawatum and Skyline.



Weigh Scales

Racers can voluntarily use the weigh scales to check weight loss or weight gain. See *Fluid and Electrolytes 101* on page 50.

Sumptuous Food

Our goal is to have food that is yummy, filling and provides variety.

Propane can be used but NO campfires. Campfire in a can concept is okay.

Hygiene and Serving Food

Use gloves when cutting and serving food. Use hand sanitizer regularly if you are not directly serving.

If there are foods that are non-dairy or gluten-free, do not use the same utensils or dishes for those foods. Keep them separate (and labelled).

Put electrolyte pills and candies like gummies in muffin cups.

Water and Electrolyte Drink

Equipment	Blue and clear jugs are for water ONLY. Red Coleman jugs are for Alete electrolyte drink ONLY.
Drinking	Refill racer hydration packs and handhelds for people who do not have crews. Racers should use their portable cup for Coke, etc.
Ice	Ice will be available at some aid stations.
Cooling down	For water intended to cool down the racer, do not use the drinking water. Instead, use water found locally. You have sponges and buckets. Add some ice to the bucket. Ask if the runner wants water and then drool a sponge full of water over a runner's head. They can sponge themselves if they want.

Aid Stn	Water Source for Cooling Down
Heather	Creeks nearby
Nicomen Lake	Lake
Cayuse Flats	Skaist River

Aid Stn	Water Source for Cooling Down
Cascade	Snass Creek
Tulameen Camp	Tulameen River
Frosty Aid Station	Similkameen River
Tom's Bench	Lightning Lake

- e-drink Mix Alele powder in container provided using capfuls indicated. This contains electrolytes.
- Salt pills Salt pills will be available. Put 2-3 in muffin cups.
- Pop Coke, Ginger Ale will be available. If it's a hot day, they won't care if the Coke is flat or not.
- Hand Sanitizer Put hand sanitizer at the end where runners approach first. Be ready to give them a squirt. (They pee in the bush, touch trees, blow their noses manually and fall down.)
- Vaseline Use wooden sticks or plastic spoons to offer them Vaseline (to prevent chaffing).
- Drop Bags **Cayuse Flats, Cascade, Whitecloud, Dick's Cabin, Blackwall Peak, Frosty, Strawberry Flats aid stations.**
- Arrange drop bags in bib order on tarp provided. Recorder calls out bib number and another volunteer sets the drop bag out ready and unzips it.
- Put out red portable chairs for racers to sit down while they change their shoes.
- Be ASSERTIVE. If there is no crew, ask the racer, "Can I get something out for you?" If there is crew, they will handle the drop bag. Racers will NOT want to bend over to get something out, so help them out.**
- After the runner leaves, put that bag in a different location so it is easy to see how many more have not come through yet.

Lighting

- Glow lights Put out the 12 hour glow lights leading up to your aid station. They expire, so please use them up. You can put up glow lights at the aid station but NOT on the highway where they may distract drivers.
- Power You can use a generator to power lights as long as the aid station is not near a campground. You can use Christmas lights if you want.
- Inverter Inverter also provides power but has no noise.
- Duct tape and bugs Bugs will be attracted to light, so string up some duct tape near the lights.

Music

You can have music playing all night except at Lightning Lake (quiet time is 11 pm to 7 am). Music keeps wild animals away and provides entertainment.

Generators and Inverters

You can use a generator with low dBA rating (quieter is better) to power lighting and music. Inverter also provides power but has no noise.

Gear to Bring

- Clothes Be ready for a wide range of temperatures from hot in the day to cool at night. **I recommend a down jacket for night.** Blanket to keep you warm.
- Backpack Carry stuff. Large is better.

Your chair	Bring a portable chair so you can sit down.
Sunscreen	Bring sunscreen.
Water	Bring water for yourself.
Bug spray	Some aid stations near rivers or creeks will have mosquitoes. Benadryl stick for bites.
Bug hat	If you have a bug hat, bring it in case. Check the aid station supply list to see if it is recommended for your aid station. Some will be provided.

Take Care of Yourself (remember to eat!)

Some people function very well on little sleep, some do not. Some get cranky, some do not. Recognize that everyone is tired and may say things that you could interpret as uncaring but trust that they don't mean it to sound that way.

Eat Remember to eat and hydrate!

Nap Your crew should **schedule** naptime so everyone breaks for a few hours.

Garbage

Sort garbage with recycling in mind. Use clear bags provided. Do not leave garbage in BC Parks containers. We can leave garbage and recycling at Manning Park Lodge **outside Windy Joe's cabin**.

Outhouses

There are outhouses available at these aid stations:

- Blackwall Peak.
- Cascade.
- Tulameen Camp.
- Nicomen *There is a pit toilet near the food cache which is about 100 ft. from the camp spots.
- Frosty.
- Strawberry Flats.
- Finish at Lightning Lake.

Volunteers can also use the outhouses at Cayuse Flats across the highway in the parking lot but racers will NOT be going that way.

If you need to use the great outdoors, make sure you bury the evidence, you are not near a water source and that you bury all evidence.

Take Down

When the sweeps come by, you can take down the aid station. Take down glow lights.

You can pour out water that was not used. Let us know how much water was consumed for next year. Do not pour electrolyte drink out as it will attract animals; instead pour it into a sink at Windy Joes.

No garbage should be left at the aid station site. Carry it out so that animals don't get it. This is just like camping.

Bring all aid station supplies to Windy Joe's cabin.

Bring food and lost and found gear to Lightning Lake Finish.

Bring drop bags to Lightning Lake Finish Line.

Bring timing sheets to Finish Line to timing tent.

During a fire ban, no cooking is allowed.

AID STATION TYPICAL SUPPLIES

Aid stations will have many (but not all) of the following items.

Tent Type

- ☐ MM tent
- ☐ Blue open tent
- ☐ Small tent
- ☐ Sponsor tent

Table

- ☐ Big table
- ☐ Portable tables

Equipment

- ☐ Blankets
- ☐ Bug hat x 2 (Shawatum, Skyline)
- ☐ Bug spray
- ☐ Bungee cord
- ☐ Clear garbage bags
- ☐ Coleman Red containers to mix e-drink (ONLY)
- ☐ Cooler for ice
- ☐ Duct tape
- ☐ Extra pacer bibs
- ☐ Frying pan
- ☐ Glow lights box
- ☐ Pails (for cooling water)
- ☐ Pens and clipboard
- ☐ Portable red chairs
- ☐ Signage to indicate distance to next aid station
- ☐ Small BBQ and propane
- ☐ Sunscreen (spray type)
- ☐ Tarp for drop bags
- ☐ Vaseline and applicator sticks
- ☐ Wet Ones

Water

Drinks

- ☐ Coke cans/bottles.
- ☐ Ginger Ale cans

Fuel Source

- ☐ Soup
- ☐ Energy bars
- ☐ Gummies
- ☐ Fig newtons or other cookies
- ☐ Gels
- ☐ Mars bars (night stations)
- ☐ Oranges
- ☐ Pretzels
- ☐ Ruffle chips
- ☐ Electrolytes/salt pills
- ☐ Watermelon
- ☐ Hot chocolate

Prepared Foods (Refrigeration Needed)

- ☐ Nanaimo bars (previously frozen)
- ☐ Peanut butter and jam sandwiches
- ☐ Potatoes with soya sauce and without, coarse salt

First Aid

- ☐ Ice pack (one time use)
- ☐ Kit

Continued>>>

Special Aid Station Foods

- ☐ Bacon
- ☐ Grilled cheese sandwiches
- ☐ Hot dogs, buns, dressings
- ☐ Pizza
- ☐ Tortilla shells.

Serving Equipment

- ☐ Coffee filters for serving chips and pretzels
- ☐ Limited cups for pop and e-drink
- ☐ Cutting boards
- ☐ Knives (big and small)
- ☐ Muffin cups for serving gummies and electrolyte pills
- ☐ Paper towels
- ☐ Plastic spoons and forks
- ☐ Sanitary gloves

- ☐ Serving containers
- ☐ Serving utensils (flipper, ladle, spoon)
- ☐ Thermos for soup
- ☐ Toothpicks for potatoes

Reference

- ☐ Race map
- ☐ Volunteer guide
- ☐ Crew and Relay Team Driving Instructions

Shirt

- ☐ Vollie shirt. (If not in bin, available at Windy Joe's.)

AID STATION LOCATIONS

How to Navigate Water Bars on Forest Service Roads

Water bars are dips in the road that allow water to flow across without flooding the road. They are created for this purpose. Most can be driven over quite easily.

To navigate a deep water bar, approach it at an angle, then when you are part way into it, redirect ahead. This one is on Calcite Road.



Driving Instructions

See [Crew and Relay Team Driving Instructions](#).

Bonnevier Race Start (Hwy #3)

Location: about 2 km past big bear (Eastgate) sign which is east of Manning Park. Aid station is visible on the highway.

Special requirements: water for the start. Our crew needs to monitor parking so no one parks on the highway and support crews use the Pasayten FSR side (toward the river). Use stanchions and flagging tape to block access. Put up **Temporary No Parking** signs.

Getting to Start Location

- From Manning Park, drive east toward Princeton.
- Pass Esso gas station.
- Pass Eastgate wooden sign.
- 2 km after sign, watch carefully for forest service road (on the right, sign indicates Upper Pasayten River. On the left it is Eastgate Road but there is no sign). Turn left onto Eastgate Road.



- Sign to look for. Cars must park on this side. Opposite side of highway from aid station.



There can be a volunteer car for radio communication.

Distance to next aid station = 16 km (10 miles).

Heather Aid Station (top of Bonnevier Trail)

Location: Heather aid station is part way up the mountain which you can travel by paved road and then it becomes gravel road. After parking, you hike up 6 km and then 2 km along Bonnevier so allow lots of time. The route from the parking lot to aid station location will be flagged.

Water: the water jugs will be at your location when you arrive.

Set up: see spreadsheet.

Take down: when sweeps come by.

Getting to Aid Station Location

- Drive to Manning Park Lodge.
- Across from the lodge, take the road on the opposite side of Highway 3 going to the lookout (left turn).
- Drive 17 km up the road to TOP parking lot.
- **Hike 6 km** along Heather Trail to Bonnevier junction. This will be flagged.
- **Turn RIGHT. Hike 2 km along Bonnevier** watching for 2 km marker.
- **Set up behind logs in grove shown below.**



Heather Trail from upper parking lot



Junction of Bonnevier and Heather, **turn right**



2 km marker



Aid station location behind logs in sheltered grove

Blackwall Peak

Location: across from Manning Park Resort, 10 km up the road to Blackwall Peak.

Special requirements: this is a MAJOR aid station for all racers. Drop bags.

Set up: see spreadsheet.

Getting to Aid Station Location

- Drive to Manning Park Lodge.
- Across from the lodge, take the road on the opposite side of Highway 3.
- Turn left toward the lookout.
- Pass by the lookout on your right.
- 10 km up the road, watch for the first parking lot on your left before the yellow gate.



Nicomen Lake Aid Station

Location: remote hike either hiking 16 km up Hope Pass Trail (Cayuse Flats at Hwy #3) and Grainger Creek Trail, or hiking from Heather Trail (longer about 21 km but great scenery and less climbing). Great location at lake where people camp and swim. Use 80 L or larger pack.

Special requirements: camp overnight near hut on Thursday night. Carry in soft water carriers; fill at lake and add Pristine. Use glow lights to direct racers into hut area or they will miss it (start up on ridge and lead racers down switchback to aid station). There is a food cache. There is a pit toilet near the food cache which is about 100 ft. from the camp spots.

Set up: see spreadsheet.

Drops will need to walk out with you when you leave.

Take down: when sweeps come by.

Getting to Aid Stn Location



Nicomen Lake



Hut for aid station

Get There by Hope Pass and Grainger Creek Trails (about 16 km)

- Park at Cayuse Flats parking area on Hwy #3.
- Cross highway, find sign for Hope Pass Trail, turn right, cross Skaist River on log and start up wide trail.
- At signed junction for Grainger Creek Trail, follow that switchback.
- Follow signs to Nicomen Lake.

Get There from Heather Trail (about 21 km)

- Park one vehicle at Cayuse Flats parking area.
- In other vehicle, drive to Manning Park Lodge.
- Across from the lodge on the north side, take the road on the opposite side of Highway 3.
- Drive up past the gate at 10 km.
- Keep going to lower parking lot where Heather Trail starts on your left.
- **Hike 6 km** up Heather Trail to get to the Heather/Bonnevier junction. This will be flagged.
- At Heather/Bonnevier signpost, take left fork to stay on Heather Trail.
- Reach post for First Brother, go straight to stay on Heather Trail.
- Come to intersection of Kickinghorse Camp. Post indicates 9 km to Nicomen Lake. Continue toward Nicomen Lake.
- Rocky switchback descends toward Nicomen Lake.
- Reach Nicomen Lake Camp (post indicates lake 1 km to your right). Go right.
- Reach campsite/hut at Nicomen Lake.

Getting Back to Cayuse Flats parking lot

- Head left/west to Grainger Creek Trail.
- Grainger Creek Trail descends for about 11 km. The creek is on your right.
- Cross bridge and come to big arrow that points to left and uphill.
- Reach Hope Pass Trail at a T-junction (map there). Turn left down river.
- Head south on Hope Pass Trail.
- Continue descent for about 5 km.
- Cross Skaist River on big logs.
- Near Hwy 3 trail veers **right**. At Hope Pass sign, turn left down to highway.

Cayuse Flats Aid Station (Hwy #3)

Location: Cayuse Flats aid station is 24 km from Manning Park Lodge, near Hwy #3 at the base of Hope Pass Trail. There are outhouses in the parking lot ACROSS the highway. Allow 20 minutes from the lodge.

Special requirements: **string glow lights across log** on Skaist River and part way up trail. Drop bags. If there's any problem with the log crossing, find the very shallow crossing just a short ways up river.

Set up: see spreadsheet.

Take down: when sweeps come by.

Getting to Aid Stn Location

- From Manning Park Lodge, take Hwy #3 west.
- Watch for sign for Cayuse Flats.
- Carefully, turn left into parking lot. Watch for fast traffic when making this turn.
- Cross highway and find post indicating trail. Go up a small hill; just past the sign veer **RIGHT** toward Hope Pass Trail and down a hill.
- Aid station will be positioned at a spot on the right before the river crossing.



Shallow crossing if needed (looking from opposite side).

Cascade Aid Station (Hwy #3)

Location: Cascade aid station is close to Hwy #3 at the Cascade sign. Skagit Bluffs Trail ends here. Allow 5 minutes from Cayuse Flats or 25 minutes from the lodge (30 km). It is a major aid station with drop bags. Outhouses available.

Special requirements: Drop bags.

Set up: see spreadsheet. 120 mile and relay head up Dewdney Trail on Friday. 70 mile and 50 mile start at Cascade and head up Dewdney Trail on Saturday morning. 40 mile starts at Cascade and heads eastward along Skagit Bluffs Trail on Saturday morning.

Take down: when sweeps come by.

Getting to Aid Stn Location

- From Manning Park Lodge area, take Hwy 3 west.
- Pass Cayuse Flats sign.
- Watch for right hand turn at **Cascade** sign.
- Drive in to reach big parking area.
- Racers will emerge close to Hwy at the Skagit Bluff Trail sign, go RIGHT into the parking lot all the way to area with outhouses.
- Direct racers onto Dewdney Trail across river, and then right.



Whitecloud Aid Station

Location: Outside Hope, along Hwy 5 then turn off to get to Tulameen River FSR. Allow 45 minutes from Manning Park Lodge to get to Hope. Travel 57 km on Hwy #5 and takes 1 hour from Hwy #5 exit.

Special requirements: Drop bags. After last racer through Saturday morning, remove flagging on Whitecloud (6.6 km) out and back.

Set up: see spreadsheet.

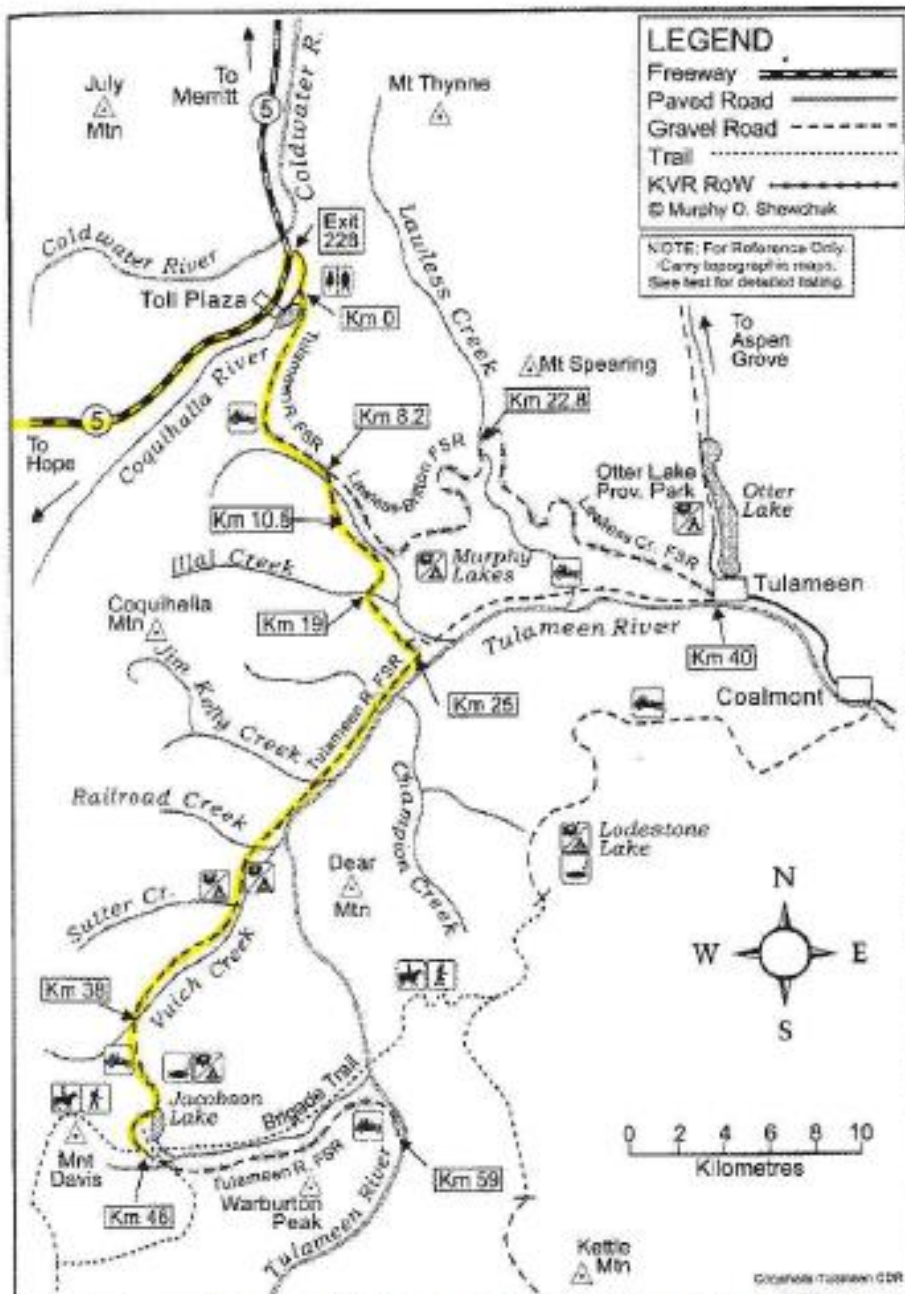
Getting to Aid Stn Location from Hope

- Take Hwy #5 from Hope.
- Travel 57 km from Hope to Exit #228 Coquihalla Lakes & Britton Creek Rest Area and turn right off the freeway.
- Proceed 200 m to 3-way stop.
- Go right towards Coquihalla Lakes Lodge.
- Drive 100 metres until you see a gravel road on the left.
- Proceed over cattle guard and you will see a blue trailer on the left. This is the start of the Tulameen Forest Service Road.
- Set your odometer to 0.
- Keep on main road and stay right at 8 km. Watch km signs and they will increase.
- Continue climbing staying on main road, stay left at 16 km.
- Stay right at 21.8 km.
- Stay right at 26 km.
- Continue on main road until Jacobson Lake Recreation site at 45.8 km.
- Continue along the FSR to 52 km and look for Whitecloud signpost.

Coming Back Out

- Follow kilometre signs indicating “down”.
- Then at the bottom, take the road toward Hope which takes you back to Hwy 5.

Access to Jacobson Lake via Coquihalla Hwy and Tulameen Forest Service Road



Tulameen Camp (access off Tulameen River FSR)

Location: Tulameen Camp is on the Dewdney Trail north of the junction with Whatcom. There is an outhouse at this minor aid station. Special requirements: SUV or 4-wheel drive. Hike in 7 km from Tulameen River FSR.

Special requirements: when they arrive, make sure all 120 milers and relay have done the out and back to Whitecloud. The 70 and 50 milers do NOT do the out and back.

Allow 45 minutes from Manning Park Lodge to get to Hope. From Hope, takes 1 hour from Hwy #5 exit.

Set up: see spreadsheet.

Take down: when sweeps come by.

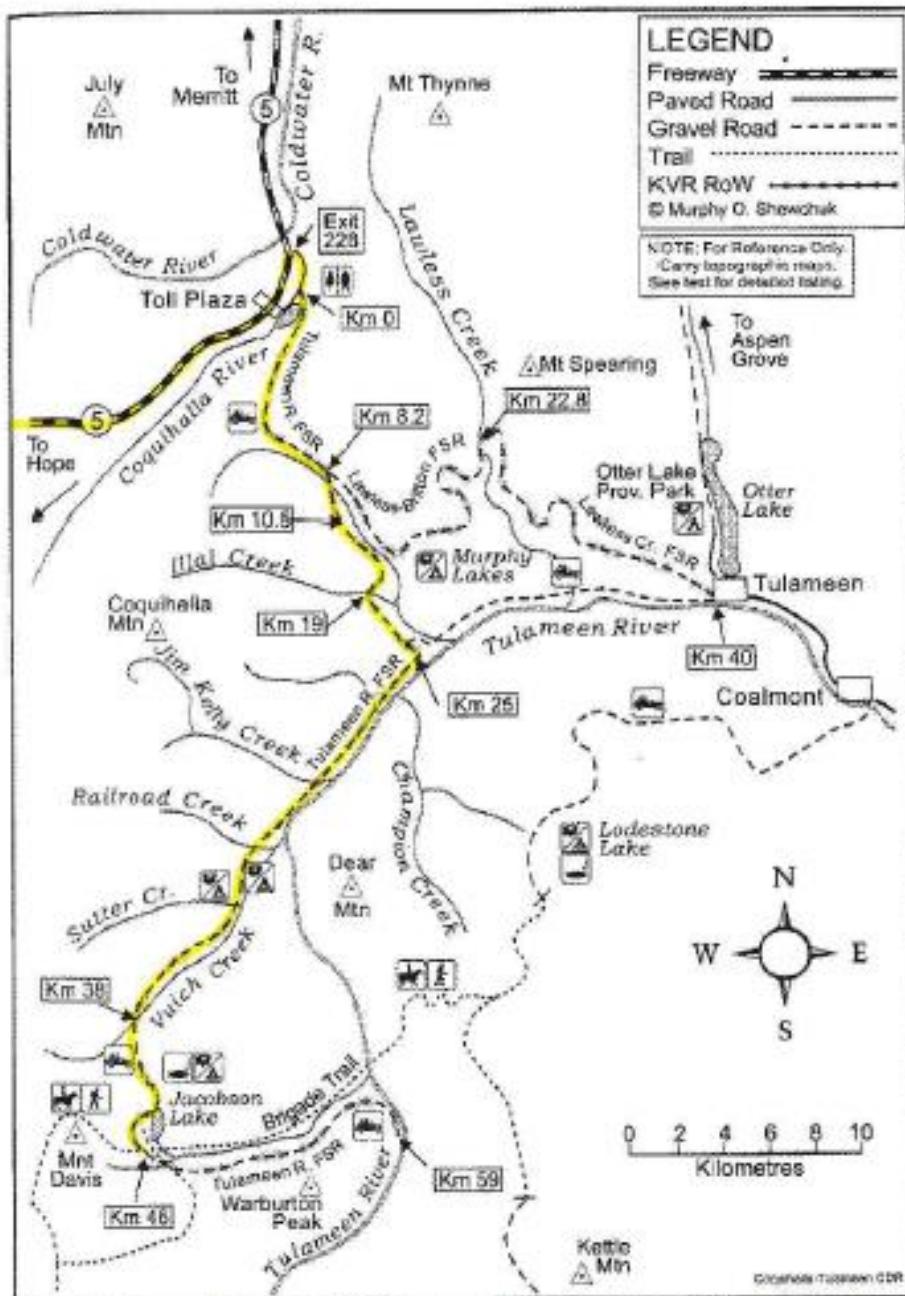


Getting to Aid Stn Location from Hope

- Take Hwy #5 from Hope.
- Travel 57 km from Hope to Exit #228 Coquihalla Lakes & Britton Creek Rest Area and turn right off the freeway.
- Proceed 200 m to 3-way stop.
- Go right towards Coquihalla Lakes Lodge.
- Drive 100 metres until you see a gravel road on the left.
- Proceed over cattle guard and you will see a blue trailer on the left. This is the start of the Tulameen Forest Service Road.
- Set your odometer to 0.
- Keep on main road and stay right at 8 km. Watch km signs and they will increase.
- Continue climbing staying on main road, stay left at 16 km.
- Stay right at 21.8 km.
- Stay right at 26 km.
- Continue on main road until Jacobson Lake Recreation site at 45.8 km.
- Continue along the FSR to 52 km and look for Whitecloud signpost. Park there and hike in 7 km along Whitecloud Trail.

Travel Time: 1 hour from Hwy 5 exit.

Access to Jacobson Lake via Coquihalla Hwy and Tulameen Forest Service Road



Dick's Cabin (Whipsaw Jeep Road) Volunteers Only; Relay Hike In

Location: Dick's Cabin is on the Whipsaw Jeep Road (11 km outside of Princeton). Allow 45 minutes from Manning Park Lodge to get to the Hwy #3 turnoff. Travel 26.5 km from Hwy #3 on gravel road; takes 20 minutes to drive last 4 km on narrow, rutty road. Distances are marked with signs. **Any support crews other than relay who arrive here will disqualify their runners. Relay runners must hike in to aid station.**

Racers will arrive on the left side of the cabin (when facing the cross) and then leave on the right road which leads to a Hope Pass connector trail.

Special requirements: **must be 4-wheel drive with good clearance; Jeep best.** Drop bags. No outhouses. (During weekdays, radio channel is whipsaw RR 5 to connect with logging crews.)



Whipsaw Jeep Road turnoff.



Dick's Cabin behind a cross.

Getting there from Manning Park

- Take Hwy #3 east toward Princeton.
- At the Esso Gas Stn (at Eastgate), consider refueling. Zero your odometer.
- At 37 km after the Esso, turn left onto Whipsaw FSR. Zero your odometer again.

Getting there from Princeton

- Take Hwy #3 west toward Hope.
- At the Sandman Inn, zero your odometer.
- At 11 km, take right turn onto Whipsaw FSR. Zero your odometer again.

Follow Whipsaw Jeep Road to Dick's Cabin

- 2 km keep right.
- 2.5 km keep left (do not take Whipsaw Lamont Road on right).
- 4 km at Y-junction keep left (do not take Whipsaw Creek Corral on right).
- 7.7 km keep left at Sunset Road.
- Just past 9 km keep straight at small turnoff to left.
- 9.5 km keep left at Helicopter Road.
- 12.5 km keep left at Laverne Road
- 14.5 km keep left.
- 15.5 km keep right at Y-junction.
- Next Y-junction keep left.
- At Granite Road, keep left.
- 22 km keep right.
- At next junction keep straight. (Note that relay vehicles park on the right in the big pullout where a new road is being built by Weyerhaeuser. From here, relay team members **hike in** last 4 km.)

- At next Y-junction, keep left.
- Next 2 junctions, keep straight.
- At Y-junction, keep right.
- Pass by Willis Cabin on your left. Keep straight.
- Next Y-junction, keep right.
- Reach Provincial Park Boundary sign.
- Next Y-junction, keep right to reach cabin.
- 26.5 km find Dick's Cabin behind the cross.

Racers Take Hope Pass Connector after Leaving Dick's Cabin

Racers head right down the road, past the lake, to reach left turn onto Hope Pass connector trail.



Returning to Manning

- Follow Whipsaw FSR to Hwy #3. Turn right onto Hwy #3 and go past Eastgate (37 km) to Manning Park Resort.

Frosty Mountain Aid Station

Location: this aid station is located 1.5 km from Manning Park Lodge on the road leading to Lightning Lake. Easy access and lots of crew support parking.

Special requirements: Drop bags. Major aid station. 120 Mile, 70 mile and Relay head up Windy Joe Trail. The 50 and 40 Mile head toward Lightning Lake on the wide trail to the right.

Getting to Aid Stn Location

- From Manning Park Lodge, head down toward Lightning Lake Day Use area.
- 1.5 km along cross small bridge, find parking lot on your left.
- The aid station will be on the grass a few steps below the parking lot beside a big log.



At 1.5 km, cross bridge; aid station will be on the other side on the left.



Long parking lot on left.



Start of Windy Joe Trail.



Sign indicating Windy Joe Trail. Racers start up Windy Joe Trail then branch off to Frosty.



Locate the aid station just in front of the log.

Tom's Bench Aid Station

Location: this aid station is behind Lightning Lake.

Special requirements: Only 120 Mile, 70 Mile and Relay descend Frosty Trail to arrive at Tom's Bench. From here, they all head along Lightning Lake Trail toward Rainbow Bridge.

Set up: see spreadsheet.

Getting to Aid Stn Location

- From Manning Park Lodge, take the right turn toward Lightning Lake.
- Park at Lightning Lake day parking in the first available spot.
- Take the sidewalk that passes by the park sign.
- Pass by the dam.
- Keep right and you arrive at the bench.



Tom's Bench

Strawberry Flats Aid Station

Location: 5 km past the Y-junction on the road to Lightning Lake.

Special requirements: Drop bags. Last aid station before the finish line. At the Y-junction just before your aid station, close off the left channel with flagging tape so that racers all keep right to arrive at your aid station at the warming hut.

Set up: see spreadsheet.

Getting to Aid Stn Location

- From Manning Park Lodge, turn right at T-junction to go toward lake (away from highway).
- At the Y-junction, keep RIGHT.
- 5 km from the Y-junction, you reach the parking lot.
- Find the path at the far left end of the parking lot.



View from parking lot.



Outhouse



Aid Station at the Warming Hut



At this signpost, keep racers to the right so they arrive at the aid station (if they go straight, they will miss the aid station).

Finish Line Aid Station (Lightning Lake)

Location: Lightning Lake, near sidewalk down by the lake.

Special requirements: BBQ, finish line arch, race clock, tents for finishers, tent for drop bags. (Racers are NOT allowed to camp here.) There is a designated dog area.

Set up: Friday morning set up tents and equipment. For timers and finish line help, set up **before 6 a.m. Saturday.**

Take down: after awards on Sunday.

Getting to Aid Stn Location

- From Manning Park Lodge, turn right at T-junction to go toward lake (away from highway).
- At Y-junction, go LEFT to get to Lightning Lake.

Fast First Finisher Times for Each Event

Event	Total Time	Start Time	Saturday Time
120	25:07	10 am Fri	11 am
70	13:07	7 am Sat	8 pm
50	8:32	9 am Sat	5:30 pm
40	9:09	10 am Sat	7:10 pm
Relay	20:49	10 am Fri	7 am

OVERFLOW PARKING

For racers who are not registered at the resort, they can park at the the ski hill parking lot. To get there, drive toward Lightning Lake, take RIGHT at Y-fork. Strawberry Flats is the first parking lot on the left (near yellow gate). The **ski hill parking lot** is about 2 km further down the same road.

We will shuttle racers back to overflow lots after they cross the finish line.

SWEEPS

The role of a sweep is to do **one or both** of the following depending on time of day:

- Follow last racer at a reasonable distance,
- Pick up flagging, signage, and stakes.

This important role helps us monitor racer progress.

Racers at the end will be tired and may be nursing an injury. So you must be prepared to go SLOW, hiking at times rather than running.

You need to be prepared for the following:

- Carry a backpack.
- **Carry a fabric bag to stash flagging in. Do not use plastic.**
- Carry enough water, electrolytes and fuel to sustain you through the leg you are doing.
- Carry your own basic first aid supplies and whistle.
- Go at runner's pace or slower.
- Have clothing for changing weather, heat, and cold.
- You may need to coach a racer along.
- If invited, a racer may want you to run alongside, for company.

Your arrival at an aid station is the cue for the aid station to close down.

You should ONLY remove flagging **in daylight or at dusk unless all flagging contains reflectors on your stretch.**

Restrict your route to **one or two legs** maximum.

RACERS WHO GO OFF COURSE

No matter how well a course is marked, runners will go off course and can lose a lot of time if they do not go back to their last known point (where flagging was obvious).

We will track racers from aid station to aid station so we know where they are.

Never pick up a racer in your car because that is grounds for disqualification.

RACER CARE

Without babying them, we want racers to be cared for.

Blisters	Have duct tape, bandaids ready.
Drops	Offer racers who drop voluntarily (or are asked to drop) blankets and foods. If they can be transported back, we will do whatever we can. Give them a place to sit and listen to their story.
Aid	Quickly take care of their needs at aid stations. Always check to see they have enough water and fuel.
Injured	Find first aid personnel.
Safety	Explain the safe thing to do whenever there is doubt. Firmly insist on check in and out.
Highway crossing	Cars speed on Hwy3. Make sure that marshalls direct them to cross only when safe, watch them cross and make sure they get over okay. If you are concerned about a person, cross with that person. Note that racers may look wobbly sometimes until they start running again and that is natural.
Glow lighting	Mark bridges near your aid station with glow lights. Cayuse Flats must also mark the log that crosses the river and mark the junction where Hope Pass trail splits into Y-fork (at signage indicating Hope Pass ahead).
Distance to go	Let them know the distance to next aid station (and avoid expressions like you are nearly there because it is not true). They will appreciate your honesty. The distance will be included in your aid station bin.
Kick in the pants	Some racers just need a kick in the pants to keep going. Crews will recognize when to kick and when to lay back. Going aid station to aid station provides manageable goals if completing the whole thing seems unmanageable; you can suggest they go to next aid station.
Finish line	After they are done, feed them and ask about basic needs. They may seem disoriented and need your help finding things.
Bag drop for Finish	Some racers may have left a bag for the finish line. Find it for them ASAP.
Clean up	Crews will shuttle them to accommodation to clean up. If a crew member is not available, volunteers can do this.

- Showers Available for racers at the Loon Lagoon. The shower costs \$5 and includes all the other facilities at Loon Lagoon. They pay at reception. Soap and shampoo are not provided.
- Encouragement Your friendly encouragement will be remembered.

EMERGENCY NUMBERS

See handout for Emergency Response.

Cell phones may not work in Manning Park. Do not rely on a cell phone.

HIGHWAY CROSSINGS AND RESTRICTIONS

No race lights allowed along highway; flashing amber lights are okay as a driver warning. We cannot stop traffic so we MUST stop racers.

SCHEDULE 'A'

1. The applicant must obtain the approval of the Event by all appropriate authorities.
2. This permit does not relieve the applicant of any obligation with regard to adherence to the Motor Vehicle Act or any other Act or Regulation with respect to the Event.
3. The Event shall yield the right of way to emergency vehicles at all times.
4. The Company must not, in view of a highway, erect, place, replace, alter or maintain a light or similar electrical device that is ordinarily visible to part of the public travelling on the highway and could reasonably be expected to create a nuisance to a person using the highway, or impair the person's vision or distract him or her in a manner that affects the efficient operation of his or her motor vehicle.
5. Marshals and runners crossing and running parallel to the road must be equipped with high visibility apparel.
6. Traffic stoppages will not be permitted.
7. Signing is to be placed in advance of the area of crossing to advise motorists to beware of runners on the road.
8. Mountain Madness Trail Running Inc. is responsible for the provision of all traffic signs on Highway #3, in advance of the crossing locations for both directions.
9. Flashing amber beacons must be on the signs for night crossings.
10. The "Normal Rules of the Road" will apply at all times for runners on a Highway.

APPRECIATION

Mountain Madness would like you to have the following perks for volunteering:

- Free camping at Headwaters Corral campground or at Eastgate fire hall during race weekend.
- Draw for 2 Fat Dog long distance race entries.
- Food.
- Volunteer shirt.

LIGHTNING LAKE FINISH LINE

For tents, bring extra metal tent pegs and rebar because of wind at Lightning Lake.

Race clock and lighting (minimal) will be powered by quiet generators.

Timers need to make sure that one person is up at all times. Work out a sleep schedule in advance.

Quiet time starts at 11 pm.

Timers start checking racers at Bonnevier aid station when first relay runner and 120 mile racer comes through. After that, you may choose to go between aid stations on Hwy 3 to collect splits and record on master and log into laptop. Need time of day that each racer leaves aid station.

See [Crew and Relay Team Driving Instructions](#).

AWARDS

Awards will be presented at Lightning Lake.

FIRST AID

First Aid personnel will be mobile. Canadian Ski Patrol provide first aid to highway access stations.

Basic First Aid

Here are some first aid responses.

Injury	What To Do
Scrapes	<ol style="list-style-type: none"> 1. Wipe dirt away from scrape; wash with water. 2. Clean with antiseptic towelette or povidone-iodine ointment.
Deep cuts	<ol style="list-style-type: none"> 1. Apply direct pressure (injured person). Elevate. 2. You put on sterile gloves. Cover cut with gauze before cleaning away loose dirt. Remove gauze, clean cut with cleaning solution. 3. Irrigate with saline solution or clean water. 4. Apply bandage strips in perpendicular fashion, closing wound but not overlapping edges of wound. 5. Cover cut with clean, lint-free gauze, thick dressing, and bandage in place. 6. Get medical attention if needed.
Twisted ankle (RICE)	<ol style="list-style-type: none"> 1. In no ice available, can create compression with tensor bandage. Provide help for walking if needed. If ankle painful, runner should walk, not run. 2. Apply ice ASAP.
Sprained ankle (RICE)	<ol style="list-style-type: none"> 1. Ask person to remain sitting. Steady and support injured ankle if help nearby. 2. Apply compression bandage, then ice if available. Make person comfortable. 3. If you must move person, immobilize ankle first (padded, makeshift splint), then assist out. 4. Do not give person anything by mouth. 5. Get medical attention.
Scalp wound (do not use ice) when you do NOT suspect head/spinal injury	<ol style="list-style-type: none"> 1. Clean away loose dirt. 2. Apply a thick, sterile dressing. 3. Tie dressing in place with triangular bandage. 4. Get medical help promptly. <p>Note: If you do suspect head or spinal injury (fell off cliff, banged head into rock), keep person very still (immobilize head) and comfortable. Get help immediately.</p>
Embedded object (do not remove)	<ol style="list-style-type: none"> 1. Clean away dirt near embedded object. 2. Build up dressings on either side of object (or make a tent as long as there is no pressure to object). 3. Put padding on either side of object to build up walls (such as ring bandage or torn t-shirt rolls). 4. Secure padding in place. 5. Get medical attention if needed. <p>If person goes into shock, lay on back, feet elevated. Keep comfortable. Get medical help.</p>
Foot punctured by nail	<ol style="list-style-type: none"> 1. Clean and bandage foot. 2. Apply thick dressing, tie in place. 3. Get medical attention for tetanus.

Injury	What To Do
Heat cramps in legs and abdomen (painful muscle spasms caused by loss of salt; may show excessive sweating)	<ol style="list-style-type: none"> 1. Put person in shade. 2. Give water to drink. 3. Get medical help if pain persists.
Heat exhaustion (cold clammy pale skin, excessive sweating, dizzy, cramps, nausea, vomiting)	<ol style="list-style-type: none"> 1. Put person in shade, lying down, feet elevated. 2. Loosen clothing. 3. If conscious, give water to drink. (If vomiting, do not give water; get medical attention.) 4. If not conscious, get medical attention.
Heatstroke (flushed hot dry skin, or flushed hot sweaty skin, dizziness, nausea, vomiting, convulsions)	<ol style="list-style-type: none"> 1. Get medical help immediately. This may be life-threatening. 2. Move person to shade, lying down, feet elevated. 3. Apply cool wet towels, sponge with cool water until help arrives.
Ticks (infection from ticks may be harmful)	<ol style="list-style-type: none"> 1. Put on gloves. 2. Use tweezers to carefully grasp tick as close to person's skin as possible. 3. Pull the tick away with an even, steady pull. Avoid squashing it. 4. Clean the area. 5. Keep the tick for identification. 6. Get medical help if infected.
Insect bites (not allergic)	<ol style="list-style-type: none"> 1. Scrape stinger carefully away from skin, do not squeeze it. 2. You can carry a commercial insect bite stick that lessens the pain of a bite.
Insect bites (allergic reaction: swelling, vomiting, breathing difficulty, loss of consciousness, nausea, impending doom)	<p><i>Note All runners who have allergies are expected to carry their own medication and injector kit. You can ask if you can give them injection with their own epi-pen.</i></p> <ol style="list-style-type: none"> 1. Call for medical help immediately. 2. Assist the person taking medication. 3. Keep the limb below heart level.
Animal bite (such as dog)	<ol style="list-style-type: none"> 1. You put on sterile gloves. 2. Allow moderate bleeding to cleanse the wound. Then, if bleeding is severe, apply pressure. 3. Clean with cleaning solution or antiseptic towelette. 4. Apply gauze and thick dressing. 5. Bandage in place. 6. Get medical attention.
Broken limb	<ol style="list-style-type: none"> 1. Control bleeding from open wounds if present. 2. Steady and support injured limb in position of greatest comfort if help nearby. 3. Apply compression bandage, then ice if available. 4. If you must move person, immobilize limb first (padded, makeshift splint), then assist out. 5. Do not give person anything by mouth. 6. Get medical attention.
Fainting, unconsciousness	<ol style="list-style-type: none"> 1. Check for breathing. 2. Check for pulse (thumb side of person's wrist). 3. Call for help. <i>First aider could do assisted breathing or CPR if needed.</i>
Eye – loose particle in eye	<ol style="list-style-type: none"> 1. Warn person not to rub. 2. Put on gloves. 3. Steady person's head. 4. Spread eyelids apart with thumb and index finger.

Injury	What To Do
	<ol style="list-style-type: none"> 5. If particle is loose, try to remove it with moistened corner of clean cloth. 6. If pain persists, get medical attention.
Eye injury (stuck to eye, do not remove)	<ol style="list-style-type: none"> 1. Close eyelid. Keep person lying down. 2. Cover with gauze. 3. Bandage lightly. 4. Get medical help.
Eye injury (embedded object, do not remove)	<ol style="list-style-type: none"> 1. Lay person down. 2. Place dressings around object to build up walls. 3. Make sure no pressure on object. 4. Immobilize the head. 5. Get medical help. If help not available, transport person out on stretcher.
Seizure	<ol style="list-style-type: none"> 1. Place person on ground. 2. Clear away anything that might cause injury. 3. Loosen clothing. 4. Let seizure happen; do not try to restrain person or put anything in mouth. 5. Get medical help.
Hypothermia (weak pulse, slow breathing, violent shivering, slurred speech, confused, irrational)	<ol style="list-style-type: none"> 1. If wet, remove wet clothing; replace with dry, warm clothing. If no dry clothing, cover with survival blanket and call for help. 2. Huddle around person to provide warmth. 3. Protect person from wind (survival blanket and forest cover). 4. Provide warm, sweet drink (but no caffeine or alcoholic drinks). 5. Get medical help.
Pulse (if asked by medical team over radio)	<ol style="list-style-type: none"> 1. Take radial pulse using your first two fingers against person's wrist at thumb end of hand. 2. Use your watch, and count number of beats for 30 seconds. Multiply by 2. Slow =40-50 Average=50-100 Fast=100-120

FLUID AND ELECTROLYTES 101: RECOMMENDATIONS FROM THE MEDICAL TENT BY LISA BLISS MD

Excerpts from Lisa Bliss portion of the race guide on the Western States website.

Lisa S. Bliss, MD

I must first toss in the important disclaimers that 1) fluid and electrolyte balance is far more an individual art than a science, 2) what works for one person might not work for another, and 3) knowing what works best for you in practice is the most important way to answer these common questions. There is no substitute for trial and error, practice and experience!

My weight is down and I feel fine

Should I do anything special? Weight is the simplest indicator of hydration status available to runners in training and on the course. Some weight loss is expected and acceptable. In general, 2% weight loss is considered “acceptable.” All things being equal, if you are down 2% of your weight, you can drink a little (1 pint fluids = 1 pound weight OR 1 liter fluids = 1 kg weight) and get your weight back up. No big deal. The concern in longer arduous runs is that an early trend towards dehydration, if not turned around, could mean that you will continue to lose weight during the run, putting yourself eventually at risk of dehydration further down the trail. We like to have runners stay close to their starting weight, not more, not too much less, simply because you have a long, long way to go. Even as little as 3% weight loss can affect performance by putting strain on the body’s cardiovascular system. Additionally, staying hydrated will keep muscle breakdown materials (myoglobin) flushing through the kidneys. So, if your weight is down and you feel good, just slightly increase your fluids and continue on your way down the trail.

My weight is down and I’m puking? How can I stop puking?

For some, puking is a common part of their ultra experience. Certainly, the stomach can simply rebel, and getting rid of all the stuff that’s been sloshing around in there can be liberating. Many runners say they feel much better after puking and can “start anew” with fluid and calorie replacement without any problems. Puking, in that sense, seems to be part of the solution to a problem.

But what if puking is the problem itself? What if it can’t be stopped, and despite an ultra effort, calories and fluids refuse to be absorbed from the gut and you become more and more dehydrated and fatigued? In this case, the runner should stop or walk and let the body rest because the body needs that fuel to propel it down the trail. You must let your gut recover.

As you know, running an ultra is stressful on the body....way more stressful than many even think they know it to be. When you place demands on your muscles to keep moving you forward, the blood in your body gets “shunted” to those muscles to fuel them with the oxygen they need to work. And if the muscles are hogging the blood, then some other parts of the body must be sacrificed at the expense of the muscles. Unfortunately, the gut is often sacrificed. And if you keep shoving precious fluids and calories into a gut that cannot absorb them, then they have to go somewhere, and they may come back up and out. So, if your weight is down and you cannot keep fluid and calories down, then you must slow down or stop – decrease the work of the muscles and let the blood get back to the gut so that it can work and absorb like it’s supposed to.

Remember too that heat can exacerbate this problem. That’s because much of the body’s blood is also “shunted” to the skin to facilitate sweating and thus cooling, leaving even less for the muscles and gut. So, if the body is hot and you are sweating profusely and your weight is down and you cannot stop puking, you must cool down your body first. When running in the heat, Ice is Nice! Dousing your head and trunk with water also aids in cooling. Cool the body first, then try to resume fluids and calories.

Some tricks worth trying (which may not overwhelm the gut while you are slowing down and letting the blood redistribute back to the gut) are sucking on ice or hard candy, and sampling other simple calories

like gels that don't require significant processing by the gut. Some runners find that ginger in various forms can be helpful as well.

My weight is up and I feel fine

Is that OK? Weight gain is fluid gain. You can acquire too much fluid by too much input (drinking) or not enough output (e.g., low sweat rate in slow runners or in cooler temps, or not peeing out the extra because of ADH) or both. I repeat: weight gain is fluid gain. The weight of salt is obviously negligible. There is also some contribution from foods, but the dry weight of food is not the primary reason for weight gain.

If your weight is up, think fluid, not salt. Sure, it is true that salt can cause you to retain fluid if you take too much, but weight gain reflects the amount of fluid on board and therefore it is the fluid that must go if you are gaining weight. Cutting salt while continuing to drink will not solve the weight gain problem (even if you have "overdone it" on the salt). Similarly, adding salt to an already fluid overload problem will not solve the weight gain problem. This will only cause an overload of both, which is difficult to remedy. **The ONLY way to solve the weight gain problem is to get rid of the extra fluid.** So, if your weight is up, the most important question to ask yourself is, What should I do with my fluids? Try to keep it simple.

That said, what holds true for weight loss also holds true for weight gain: a little weight gain is usually not harmful – IF you feel fine. Still, in that case, you definitely should decrease your fluid intake so that your weight is down by the next medical check. Do NOT continue the same rate of fluid intake because, it's too much! Always remember that if your weight is up, you are in NO WAY in danger of dehydration; you are, in fact, overhydrated. So, decrease the fluids and get your weight back down.

If you are feeling fine and urinating fine, then simply decrease your fluid intake and reassess at the next medical check.

If you are feeling fine but you are NOT urinating, then the situation is a bit more precarious. That's because if you keep drinking and sweating at the same rate, and you are not eliminating those excess fluids, your weight will go up quicker and you are putting yourself at risk of the dangerous, much talked about, fluid overload hyponatremia, where your sodium literally drops too low from getting diluted in the blood. So, remember, just because you are feeling fine at one point doesn't mean you will be feeling fine down the trail.

Take care of the little things as they come up, make small adjustments early, and prevent problems down the trail. So how much is "a little weight gain?" That's a tough one to answer. Let me say that it depends on how you feel. If your weight is up 3% and you're feeling great – with NO problems – then you should follow the advice of "continue on but decrease your rate of fluid intake so that your weight is back down at the next medical check."

If, however, your weight is up only 2% but you are NOT feeling fine, and you have symptoms of hyponatremia (including headache, nausea, vomiting, dizziness, lack of coordination....think "intoxication"), then that "little" amount of weight gain for you IS harmful and you should stop drinking and follow the directions of the aid station personnel. This doesn't necessarily mean your race is over, but if you don't take care of the problem, it certainly may be!

The bottom line is, if you are overweight and feeling fine, decrease your intake and get your weight back down. Take care of it early to prevent trouble later, and beware of repeating the same thing later in the race!

Remember that one way to lose fluids from the body is through sweating. Sweat rate also increases with a faster pace, and decreases with a slower pace. That may seem obvious but there are a lot of runners who believe if they are slower and "out there longer" that they are more likely to get dehydrated. Reality is, these runners not only sweat less, they also have more time to drink. They are actually at a greater risk of becoming fluid-overloaded. Also, smaller body types have less room for

error when it comes to maintaining a proper sodium concentration in the body. So, smaller folks are also more at risk of getting fluid overloaded, just because it is easier - based on total body water - to do so. Note that a runner does not have to gain weight to develop hyponatremia. One can be dehydrated and still get it. This usually occurs in faster runners who sweat out a lot of fluid and electrolytes and inadequately replace both. Symptoms are similar in either setting.

My weight is up and I feel horrible!

First, stop drinking. Second, pee. Putting more fluids (including electrolyte drink) into an already fluid overloaded body that feels shitty is asking for trouble. So, no water, Gatorade, GU2O or even IV fluids! The only acceptable thing to imbibe is a concentrated sodium mixture, like 4 bouillon cubes mixed in 4 oz of water or soup broth with an extra bouillon cube or two mixed in. The goal is to get a little sodium while NOT adding extra fluids. Salty foods are ok too. BUT, that's just the initial step. You are not cured just by doing this! You should not continue down the trail doing the same thing and expect different results, i.e. to feel better. Depending on how you feel (or how you present to the medical personnel), more needs to be done....and peeing is key. You must rid your body of the extra fluids. And sometimes this is the toughest part of running an ultra making yourself pee off extra fluids when your weight is up and you feel shitty. Continue on.

My weight is up and I can't pee

So now what should I do? Under "normal" conditions, if you drink too much, you simply pee it out. However, there is not much "normalcy" in running a 120 mile race through elevation, temperature, and diurnal changes! Running puts your body under a great deal of stress. One of the body's common reactions to stress is the secretion of a hormone called ADH (Anti-Diuretic Hormone). Remember that a diuretic (like coffee) causes you to urinate more. So, an anti-diuretic causes you to urinate less or not at all, depending on the level of the hormone in your body. Under "normal" conditions, if you drink a lot of fluids, ADH is suppressed, and this cues the kidney to "diurese," i.e., pee out the extra fluid. However, under stressful conditions, sometimes ADH is inappropriately released and it causes the kidney to hold on to the urine. It is an inappropriate release because if you are fluid overloaded, ADH should not be hanging around inhibiting your kidney from dumping that extra fluid. This ADH is often the nemesis of the ultrarunner that can't pee. (Note that moderate dehydration will also cause the kidney to hold onto urine too.). The key here, is that if your weight is up and yet you can't pee off those extra fluids, ADH is the likely culprit. So, what should you do in this situation? Well, these are the things you run across at ultras that can cause ADH to be released even when you don't want it around (like when your weight is up and you need to pee off the extra fluids): nausea, stress, and hypoxia (elevation). There is LOTS of anecdotal evidence that decreasing the stress load on your body can help the body to "relax" and get rid of that inappropriate ADH hormone and thus allow the kidneys to urinate.

Decreasing stress may seem impossible, but there are definitely things you can do.

- Slowing down or walking is a good place to start.
- Cooling down if hot is also helpful. By decreasing the stress on the body and allowing the body to get rid of the ADH, you will eventually see (or hear or feel) the flood gates open and your kidneys will dump that extra fluid. Slowing down and cooling down are likely some of the reasons why runners tend to diurese during the night portion of the run.

How much salt should I take and how can I monitor it?

If you chose to supplement with salt, you must practice this in training. Every runner is different with regards to salt intake during ultras. Some runners take no supplements and get some sodium with the foods and drinks. Others prefer to drink water or sports drink and take salt supplements so that they can better regulate their intake. There is no right or wrong way.

In an ultra, sodium is primarily lost in sweat. It can also be lost with vomiting or diarrhea. It is also excreted in the urine. Some researchers say that all sodium lost in sweat should be replaced; others say it does not need to be replaced at all (at least in shorter, "easier" runs). Many ultra runners swear

that supplementing with salt during the run is helpful or even necessary. For now, I will side with the experience of the ultra masses that encourages some sodium intake whether by supplementation or salty foods.

For the average runner: Sweat rate averages between 1.0 and 2.5 liters/hour. Some runners sweat more, some less. When heat trained, sweat rate increases (you sweat sooner and more), and the sodium in your sweat decreases (the body conserves sodium). Sweat rate also increases with a faster pace, and decreases with a slower pace. Average sweat sodium loss per liter of sweat is between 900 mg and 1400 mg. Some lose less, some much more. For a mental picture of how much sodium that is, 1 teaspoon of table salt (NaCl) has about 2300 mg of sodium (Na) in it. The amount of liters of sweat per hour can be determined by weighing naked before and after running...though I warn you that sweat rate for the same runner may vary tremendously over the course of 100-mile race. So, while it may seem like it comes down to just math, numbers are really just general guidelines and if, followed too strictly, can get you into trouble. There are just too many variables, not only from ultra to ultra, but within one race too (affected by training, changes in pace, altitude, food, temperature, etc.).

Still, the best *general* recommendation I have found is to supplement with about 300 mg to 1000 mg per hour. It doesn't matter how you get it, whether it's through sodium supplements or from the diet. This amount may not replace all the sodium lost in sweat, but we don't know if a runner NEEDS to replace ALL the lost sodium for optimal results. So, nothing replaces your own experience. And remember, do not make drastic changes on Race Day! Also know that not all supplements are created equal! Succeed! Caps contain 341 mg sodium each, Thermo Tabs contain 160 mg sodium, and Hammer e-caps contain 40 mg sodium (the label says 100 mg of sodium chloride NaCl, but NaCl is only 40% sodium by weight). I know there are many runners that do very well with lower sodium amounts than what I state here. That is fabulous. There is no right answer. You should do whatever works for you.

I'm getting muscle cramps

What should I do? There are 2 main theories on muscle cramping. The first is that they are due to neuromuscular fatigue and the second is that they are due to electrolyte depletion and dehydration. The best thing to do for muscle cramping is to try to prevent them in the first place. Nothing substitutes for training. Specifically trained muscles will be adapted to the tough conditions. Sometimes cramps are unavoidable.

So, if cramping occurs in one muscle like the calf, for instance, then you should do a prolonged stretch of that muscle until the cramping subsides, repeating as necessary.

If you have multiple muscles cramping or cramping more proximally, like in the quads, you should assess your fluid and electrolyte status. Is your weight too low or too high? Both may contribute to more diffuse cramping due to dehydration or sodium depletion respectively. Some experienced runners take extra sodium or potassium to help with cramping. It is worth a try. Still, the best advice to try to avoid cramping may be to train specifically for the race.

Will I know if I am getting heat stroke?

Heat stroke is a medical emergency. It can come on quickly but there are usually warning signs. It does not have to be 90 or 100 degrees Fahrenheit for heat stroke to occur; it has been known to occur even in the 60s. You must prevent heat illness and know how to treat it quickly if you suspect it. Know that the body's muscles create an enormous amount of heat. Harder working muscles create more heat, so faster runners generate more heat than slower runners. That heat must be expelled from the body. Heat accumulates in the body when heat production exceeds heat loss. Slowing the pace is one way to decrease heat production. The evaporation of sweat from the body is one way to increase heat loss. Sweat does not evaporate as well in humid environments, so humidity increases the risk of heat illness if other factors (like speed) are not modified.

Things to look for: **feeling overheated, profuse sweating, and flushed skin as the body shunts blood to the skin in effort to promote sweating, headache, nausea, vomiting as the gut shuts down at the expense of blood being shunted to the skin.** If any of these are present, start cooling your body by dousing with cold water and start generating less heat by slowing down or stopping. Ice wrapped around the neck is a very efficient way to help cool the blood as it makes its way to the brain. Consider buying an Ice Cap or Ice Bandana! These are priceless in the heat!

Scariest symptoms of heat illness include dizziness, confusion, and irritability. Any of these symptoms should prompt a medical evaluation. Sure, some runners get irritable without having heat stroke or another serious medical condition, but an evaluation is necessary. Listen to the concerns of other runners, family, or medical personnel. Because some conditions cause confusion, others may be more aware of the danger signs than you!

Ice application is the easiest first line treatment. Place ice packs in areas of major arteries – around the neck, in the arm pits and over the femoral arteries in the groin region. Never assume that an oral temperature accurately measures the core temperature! The only accurate core temperature measurement available is a rectal temperature. So, take heed, and when heat illness is suspected or even in question, just start cooling the body!

What if I get dizzy when I stop running?

What should I do? This is very common and is likely due to postural hypotension. That is, your legs have been working to pump the blood back up and through the body for hours. When you stop, you suddenly take away that pump and the blood can, in a sense, pool in the legs, causing you to feel faint.

- The best solution....keep running! Or at least, keep moving.
- However, if you need to stop and cannot keep moving, pump your feet and march a bit in place, and that will help keep the blood circulating up towards your head. If that is not successful and you feel too dizzy and fear you may fall or pass out, then lay down before that happens...or else your body will do it for you! A few minutes of elevating your feet (and even hips) will utilize gravity to get the blood to your head. The dizziness should subside fairly quickly in this position. If it doesn't or you are concerned, seek medical attention.
- Dizziness (and even passing out) can happen after finishing the Run, even up to an hour after finishing! It happens for the same reason – you've turned off the pumps in your legs. Again, the best thing to do is to keep moving.
- BUT if you are taking a well-deserved break by sitting or lying down, it is prudent to "pump" your feet and legs to get the blood moving before standing up. It can take some time for your body to adjust to your legs not moving, so it's good to be aware that this can happen, and that it is in fact, fairly common. Also know that dehydration has nothing to do with this kind of postural hypotension. Symptoms should resolve with lying down with your legs up. It may take several minutes or even an hour before the dizziness resolves upon standing. If you or someone you love has any concerns whatsoever, seek out medical personnel.

What if I get dizzy and lightheaded when I'm running or walking?

This is more serious than the above scenario. If you are dizzy or lightheaded on the course, the first thing to consider is your blood sugar level. If that drops too low, you can be overwhelmed with fatigue and can become light-headed and even your mood can change drastically.

A secret handed down from one of the best ultra runners around is to always carry some simple sugar with you, like some hard candy or similar.

This is the time to indulge in that sugar! If low blood sugar is indeed the cause of your symptoms, then you will notice a dramatic recovery. If that is the case, get yourself to the aid station and fill up your tank enough so that it doesn't happen again. Cokes and 7-ups have plenty of sugars too and will perk you up.

If, after trying sugar, the dizziness and lightheadedness continues, you should seek medical attention. It could be due to a number of things, including heat illness, hyponatremia, even a problem with your heart. It could also be due to simple fatigue, but in any case, you should err on the side of caution and get checked out. Even dizziness from fatigue alone is hazardous on the trail. The opportunities for falling are many, and that alone, can be very dangerous.

Peer pressure

Some runners will literally drown in the amount of fluids that other runners require. In general -- but not always -- women tend to require less fluid than men. They tend to have lower body weight and perhaps we really do not sweat as much in general. It seems that they also tend to get in a little more trouble with ADH. Perhaps there's a hormonal reason for that. Probably. But it hasn't been proved yet. So, no matter your gender or what the issue, don't do something based on what works for someone else. Do what works for you!

Swelling

It could mean too much fluid or too much salt or too much of both, or it could just happen from arm swinging or just because it does. Finger swelling is not a very reliable indicator of fluid or sodium status. Generalized swelling, however, including the wrists and forearms, is more likely to indicate fluid overload.

Spitting

The convenient and inexpensive Spit Test is a good test of hydration status. If you can easily work up a spit, chances are, you are well-hydrated!

Renal Failure

Obviously, one thing we want to prevent during ultramarathons is the development of acute renal failure. Acute renal failure can result from the combination of dehydration and high myoglobin levels due to muscle damage (also known as rhabdomyolysis). So it makes sense to avoid excessive weight loss and to do everything possible to assure that your muscles are well adapted to the demands of the race. Interestingly, we have now recognized a link between hyponatremia and rhabdomyolysis. It may be that muscle cell swelling caused by the hyponatremia makes the cell membranes less stable and more likely to disrupt and release muscle breakdown products into the blood.

A word about the role of **non-steroidal anti-inflammatory drugs** (NSAIDs) in the development of exercise-associated hyponatremia is warranted. NSAIDs cause constriction of the blood vessels leading to the kidneys. These drugs also potentiate the action of antidiuretic hormone (also known as AVP) on the kidney. This hormone acts on the kidneys to prevent water loss into the urine. As such, NSAIDs increase the risk for the development of hyponatremia which makes the chances of developing rhabdomyolysis greater, and they further increase the risk for acute renal failure by constricting the blood vessels supplying the kidneys. It should be apparent that the use of NSAIDs during endurance events is risky business.

Final comments

1. Use caution in interpreting the measured weights at aid stations. Scales are not always calibrated or may read inaccurately if not on a level surface. Pay more attention to the trend you are observing.
2. Drink responsibly during long periods of exercise, avoiding dehydration and over-hydration. Shoot for a 2-3% weight loss during long endurance events. This much weight loss will generally keep you at normal hydration levels (assuming you had good glycogen stores at the onset of exercise), and will not impair your performance.
3. Avoid the use of NSAIDs during exercise. These drugs increase the risk for hyponatremia, rhabdomyolysis and acute renal failure. If you add to this mix, inadequate training, perhaps due to an

injury, which would make it more likely to develop rhabdomyolysis, you are a real set-up for developing acute renal failure.

4. Some intake of salt during extended periods of exercise may be reasonable. If your weight is down at least 2-3%, some sodium intake is probably not a concern and may be valuable for some people under some conditions. However, if your weight has increased or is stable, then our current knowledge would suggest that you should not be taking in sodium and that you need to reduce your fluid intake as well.

RECIPES

Soya Potatoes

Cook nugget potatoes at 375 F in cooking dish with a little butter or Becel, **only** until just done.

Slice each in half, pour a few tbsp of soya sauce in the pan. The potatoes will soak it up.

When cool, put into plastic containers for aid stations.

WEBSITE LINKS

Fat Dog Home page: <https://www.fatdog120.ca/>

Volunteer page: <https://www.fatdog120.ca/site/about/volunteers.html>

Paradise Valley Route for 2019: <https://www.fatdog120.ca/site/about/paradise.html>

Trail Work page: <https://www.fatdog120.ca/site/trail-work.html>

Photos page: <https://www.fatdog120.ca/site/photos.html>