

Team Handbook

Alaska Nordic Racing 2023-24

alaskanordicracing.org

This document exists to answer questions that may come up in your first (or fifth) season of club ski training - it's not all required reading! Check out the summer flier [here](#) for specific practice schedules.

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Program overview

Team goals

1. Skiers are made in the summer! Nordic skiing demands a high level of fitness that must be built over the course of months and years - the first goal of a summer training group is to prepare you for the winter.
2. Build a lifelong community in nordic skiing.
3. Develop a strong and adaptable understanding of fitness that will transfer to life outside of nordic racing.

Program structure

Age groups

Middle School: Two sessions per week. Introduction to nordic skills through a fun-focused training group.

High School: Four (or more sessions) per week, for athletes focused on improving their nordic race performance year-round. Our training program is geared towards athletes competing in the [Besh Cup](#) races in the winter. Competing in the Besh Cups is *not required* for skiers wishing to do summer ANR, but our training plan is designed for competitive racing. Skiers in the high school program will be expected to complete some of their weekly training outside of group sessions, and will be given a personal log to track their training.

Training groups

With skiers all over south central Alaska, we are happy to offer three location-based training groups. Skiers are only expected to participate in their local training group, but are welcome to join any group's practice if they wish. Practice times and locations will be set by the local training group, and can be found in [Slack](#) and on the team [GCal](#) every week.

Eagle River

High school training group meeting 4x per week, middle school training group 2x per week. Practices will regularly be held at Chugiak High, as well as other trail running and rollerskiing locations around Eagle River and Chugiak. The locations and activities of each practice will be published on the team calendar.

Valley

High school training group meeting 4x per week, middle school training group 2x per week. Practices will regularly be held at Palmer High and Government Peak Recreation Area, as well as other trail running and rollerskiing locations around the Mat-Su Valley. The locations and activities of each practice will be published on the team calendar.

Kenai Peninsula

Soldotna: high school training group meeting 4x per week. Please refer to the [Soldotna flier](#) for more information.

Homer: under construction! We will have more information for Homer athletes soon.

Logistics

Team communication

Slack

We use the workplace communication app, Slack, as our primary platform. This keeps all of our team communication in one place, and prevents important info from getting buried in texts and inboxes. Setup information can be found [here](#), please install both mobile and desktop apps. Contact tegan.e.thorley@gmail.com with any technical issues.

Google Calendar

Valley and Eagle River group training will be posted on our team Google Calendar. Setup instructions can be found on our website [here](#).

Requirements for participation:

- [Medical form](#) completed and handed in to an ANR coach
- Program fee paid by check to ANR or on alaskanordicracing.org
- Make sure you're signed up for [team communication](#)
- Check [important dates](#)
- All necessary [equipment](#)

Pricing

Refer to the current [session flier](#) for pricing. Program fees allow us to provide resources such as coaches, rental equipment, and scholarships. If these fees pose a financial burden, please contact our [treasurer](#) for scholarship information.

* **Peninsula skiers:** contact [Alex Serventi](#) for pricing details

Equipment

Athletes must have good running shoes and ski boots, a helmet, poles with rollerski ferrules, and a bright layer for rollerskiing. Athletes must wear appropriate outdoor training clothing and be prepared for changing weather. ANR has classic and skate rollerskis available to rent for the summer for \$25 per pair - if you are paying by check, please include rental payment for

rollerskis. Rental fees can also be paid [online](#). **If you know you will be skiing for the next few years, please purchase rollerskis.** The program skis are a great resource to have, and we would like to keep it available to families just starting out. We do not have enough rollerskis for everyone, if returning athletes and new athletes are all expecting to rent.

Gear questions? Check out the [pack lists](#) or [gear guides](#) for more in-depth information.

Practice schedule

General schedule will be sent out on the [current session fliers](#), specifics for the week will be posted on the [ANR Google Calendar](#).

Early summer daily schedule

Before the end of school, we run a reduced schedule (2-4x per week) with the expectation that many of our skiers are participating in spring sports. Skiers looking for more group training before the end of school are welcome to join the other group's practices at any time. **Middle school sessions will begin once school is done for the summer.**

Summer Daily Schedule

Beginning after the end of term (May 22). Practices will typically be held at the location posted here, but are subject to change based on weather and training demands. Please check the [team calendar](#) each week for an up-to-date schedule. Short-notice changes due to illness or inclement weather will be posted on Slack. **High school 4x per week, middle school 2x per week.**

Types of Practice

For all of these practices, we have a simple pack list posted on the [website](#)! For more in-depth information on equipment, check out our [gear guides](#). If your question still hasn't been answered, get in touch with a coach and they can help you out.

Running

We will do a lot of running this summer! Skiers should be comfortable running for about 75-90min continuously at the start of the summer. There are two kinds of running variations to be aware of:

Trail running: Our trail runs will occur both in town (Beach Lake or Crevasse Moraine) and in the backcountry (the Front range of the Chugach, or Hatcher Pass and the Talkeetna range).

[Extra gear](#) should be taken for backcountry runs, but skiers should have appropriate footwear for trail runs of any kind. Trail running shoes are preferred, but running shoes are required. Flat-bottomed shoes such as Converse or Vans are great for strength workouts, but will not provide enough support or traction on muddy trails and rocks. As you all know, bear and moose encounters are possible anywhere in our area, and skiers should exercise their own judgment re: bear mace or other precautions.

Bounding: this is an on-foot simulation of classic ski technique. Skiers should prepare for bounding workouts as they would for a trail run, plus chest-height ski poles. Adjustable hiking poles are not recommended, as they are very heavy and can be awkward to bound with. If you don't have good poles for bounding, you can either find a pair of short ski poles from a secondhand retailer (no need to buy new poles just for bounding), or you can borrow a pair.

Rollerskiing

Just as there are separate skis for classic skiing and skate skiing on snow, there are separate classic and skate rollerskis. Rollerskiing is the best substitute for on-snow skiing there is, so it makes up a significant component of our summer and fall training. Skiers must have classic and skate rollerskis.

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[Rollerskiing gear guide](#)

Strength

We do weightlifting in the gym, as well as faster-paced circuits. Athletes who are new to the weight room will be taught correct lifting form at the beginning of the summer.

Training camps

Summer camps: we will have a few locally-based day camps throughout the summer, as well as the potential for a travel camp. We'll need some parent volunteers for a travel camp, please let Tegan know if you're interested!

REG: Third week of July. Regional Elite Group training camp, by invitation for athletes who made Junior Nationals this year.

Thanksgiving: At-home training camp after the start of high school skiing. We take advantage of our November snow to get in some hours before the race season starts in earnest.

Holiday camp: as most high school teams don't organize group training over the holiday vacation, ANR offers a three-day at-home training camp to get on skis with your friends and fine-tune technique during the race season.

Crash course to training

This is an overview of the physical part of our training - types of workouts, how we train as year-round athletes, and broad guidelines for nutrition and recovery.

All high school ANR athletes will be given a personal training plan and log by May 1st, which they will receive an invitation to via email. Instructions on how to use this log can be found on our [website](#).

The What & When of Training

Components of training

Volume

The workouts during volume weeks will be at a slower pace, and longer distances. This is to train slow-twitch muscles fibers and aerobic respiration, which is the basis for most of what we do.

Working on getting a faster race pace is impossible without building this aerobic base first - slow-twitch fibers help repurpose the waste product generated by anaerobic respiration (the lactic acid that you may have felt on Lazy Mtn or Mile Hi), and turn it back into useable energy.

Without training the slow-twitch base, the body doesn't have the mechanism to clear that lactic acid, and recovering between difficult parts of a race course will get harder and harder. The better-trained this aerobic base is, the faster your recovery.

This is the part of your fitness that makes the biggest difference in day-to-day training: longer, more difficult runs become way easier, and you can more easily benefit from higher-intensity work. And, it makes jumping into the XC running season a lot more painless!

Jump to [fueling for volume](#)

Intensity

The effort level of intensity workouts can be anywhere from just above your easy-distance pace, to your absolute maximum. The effort level and duration of these workouts depend on which function we're trying to target: increasing how much work you can do while staying

aerobic, increasing your race pace, dialing in high-speed technique, or building tolerance to race-level physical stress.

We sort effort levels into categories, called “levels” or “zones”. Almost all endurance athletes use some form of this system, but exact definitions can vary by team or by sport. Three levels are usually used for intensity workouts:

Level 3 (L3): “fun-hard”. Easier than race pace. This is a pace sustainable for a duration longer than most races.

Level 4 (L4): Race-pace for high school distances (5-10k range)

Level 5 (L5): Sprint pace (max. 1.5km)

Speed*: unsustainable for more than 30-40s

L1 and L2 are aerobic levels, where muscular function can (almost) entirely rely on oxygen. These play a significant role in volume and recovery workouts, and we’ll use them to warm up for intensity.

Check out the Uphill Athlete [website](#) for more detailed physiological descriptions of zones.

How to tell what level you’re in:

The easiest and most accurate way to know your effort level is with a heart rate monitor. Athletes who have committed to nordic skiing as their primary sport should have an HR monitor, ideally with a chest strap. These are very useful tools for any endurance sport, including biking and running. There is a huge market for sport watches, but you do not need every high-tech feature. The only features we recommend looking for are HR monitoring and GPS- you don’t need to be able to get emails on your watch.

Some brands popular with skiers: [Suunto](#), [Polar](#), [Garmin](#), [Timex](#)

Without an HR monitor, there are several ways to gauge your effort level, which are up to personal preference. Much of this will come with time, and with familiarity you’ll be able to distinguish between different effort levels by feel. For example:

L3: Breathing hard, may be able to say short sentences: “wow, Stan is fast!”

L4: Speech is limited to 1-2 words at a time: “track” or “watch out”

L5: Speech nearly impossible, one-syllable sounds: “aghh”

Strength

Contrary to once-popular belief, strength and cardio training complement each other. Moving anywhere fast on snow takes a lot of aerobic fitness, but increasing general and ski-specific strength makes efficient technique much easier, and helps us become better-rounded athletes.

Athletes will be taught basic lifting form, and then do a max lift test. We use this test to give them a personalized strength training progression based on their beginning fitness levels. The test serves no purpose except to fine-tune workouts for individual athletes.

Technique & Agility

All three of the earlier categories (volume, intensity, and strength) are dedicated to increasing the amount of energy we have. Good technique ensures that hard-won energy is used as efficiently as possible.

Technique is improved by doing drills and agility workouts to promote certain patterns of body position. Coaches will also make individual adjustments to technique during rollerski practices. It can be very helpful to have a clear internal picture of what good technique looks like, so watching World Cup races will set you up well for technique work!

Summer

Early May - Beginning of school (late August)

We will have a “soft start” the first week of May. While school is in session, we have practices in the afternoon. Many skiers are participating in spring sports, and choose not to come until the end of the school year.

After school ends for the year, we will have four morning sessions per week in each location throughout the summer, as well as a couple [training camps](#) through the season. Most families will miss some part of summer training for travel - if the coaching staff is made aware of travel ahead of time, we can make a training plan for you to do while you're gone.

During the summer, we focus on getting in lots of hours. Lots of daylight and lack of school commitments make this the best time of the year for volume. Starting with “polarized” training is a good way to hone in on our peak fitness efficiently and sustainably. Polarized training is when we work both ends of the training spectrum at the same time- very long, easy distance

workouts to improve our aerobic base fitness, and very short, fast speed and strength workouts to improve technique.

These two types of workouts are so different, training one won't make you over-fatigued for the other - ex. we can do a speed and weight session on Tuesday, then go for a long run on Wednesday, and benefit from both sessions.

We will introduce intensity in the summer, but will not do a ton of work at race-pace until later.

Fall

Beginning of school (late August) - start of high school skiing (early November)

We transition from general fitness in the summer to specific fitness in the fall. We keep some long workouts in, but start focusing more on intensity and getting our race-pace efforts and technique dialed in. Athletes that have committed to skiing as their primary sport are encouraged to continue attending ANR at least 2x per week. Our options for fall training are:

Full-time 4x per week

Part-time 2x per week (common for skiers doing XC running)

October-only only attending practice after the XC running season ends, before high school skiing

Winter

Race season! ANR does not hold regular high school practices, as skiers are mostly practicing with their high school teams. Regular middle school practice is offered in the Valley and Eagle River.

We do offer our two winter training camps over the Thanksgiving and Holiday breaks. ANR also provides race support for the six Besh Cups and US Nationals.

Spring

Recover, do the things your coaches give you a hard time about in-season (alpine touring or hut trips), and get ready for summer!

OYO workouts & recovery

The most vital parts of training will occur outside of practice. This places a lot of importance on staying accountable to your training, even when it might not be exactly what you want to do at

the moment. You'll need to work when no one else is there to get you moving, and you'll need to listen to feedback from your body, even when it's not telling you what you want to hear.

OYO's

An OYO is an on-your-own workout. Depending on your experience and your goals, you may have to do a lot of hours outside of practice, or only a few. The higher your goals, the more work you'll have to complete OYO. Most of the time, recommendations for OYOs throughout the week will be posted on your training log. Other times, especially if you're doing another sport outside of ANR training (like XC running), you may have to plan more of your own training.

For example: on your training log, you will have an hour target for the week. During the summer, you might have a week target of twelve hours. If you get eight of those hours done at practice, that leaves four left to do OYO, which you will plan throughout your week. Most of the time, OYOs are easy distance workouts. You'll rarely need to do intervals or strength workouts on your own. If you have questions, you can ask a coach, but try to plan your OYOs yourself first!

There will be parts of your log dedicated to guiding OYO workouts, more information on how to use them can be found [here](#).

Recovery

Workouts don't make us stronger, recovery does. Working out breaks down your body - muscles, energy stores, hydration. Stronger, more resilient bodies are built after the work is done, as that (strategic) damage is repaired. For muscles to be able to repair themselves, they need time and materials.

Time - the harder the workout, the longer it'll take to rebuild from the stress of the work. Different workouts take different amounts of time, and recovery time will depend on the individual skier. Some athletes will get very fatigued from an interval session, but feel fine after a 4-hour run. Others will experience the opposite. Being in the habit of keeping a **training log** will help you and your coaches figure out how you respond to and recover from different types of workouts. Logging your training is one of the most productive things you can do as an athlete.

Materials - this refers to internal materials like proteins, electrolytes, and hydration - *not* foam rollers, thera-guns, or other recovery toys (though those can be helpful, too). In order to benefit from your workout, bodies need to be able to repair the breakdown that has occurred. You need

to supply the building blocks to rebuild muscle fibers and energy stores. This is why skipping meals after workouts is so detrimental - it doesn't allow your body to benefit from the physical work you've done. The gold standard of recovery is the "glycogen window" - the period of time following a workout when your body most efficiently processes glycogen. Taking advantage of the glycogen window is pretty simple - eat a snack within 30 minutes of finishing your workout. Really anything will do - just get food. If you want to get technical with it, a 4:1 carbs:protein ratio is (supposedly) optimal. Hydrate regularly, and supplement with electrolyte mixes after especially long or difficult aerobic workouts. Include protein in your meals following strength workouts.

Skier Fueling

Overview

1. Stay hydrated! Even when it's cold out, we lose a lot of water to sweat, and staying hydrated is the best way to make sure your muscles can rebuild after getting worn down by a workout.
2. Do not restrict caloric intake, unless you have been specifically instructed to by a medical doctor. This age range is a critical point in developing metabolism, and completing this volume of activity without adequate fueling will lead to long-term metabolic deficiencies. It is especially important that you do not restrict food intake immediately before and after workouts, as this will make it much harder for your body to complete and benefit from the physical work.
3. We recommend that skiers be involved in their own cooking & fueling, especially during the summer. This structures an understanding of nutrition around simple, whole ingredients, rather than certain foods being good or bad. Cooking for yourself as an athlete helps to build a sustainable relationship with food and increase independence with nutrition.
4. Eat colors. The nutrients supplied by fruits and vegetables have a huge impact on your training, by keeping you energized, injury-free, and healthy.

Fueling for workouts

- Bring water for any distance workout longer than 1hr, and small snacks (energy chews, granola bars, PB&J) for anything longer than 1.5hrs.
- It's a good idea to have a snack & extra water waiting for you after the workout.

Volume or Over-Distance (OD) workouts

Doing long, slow work uses aerobic respiration, which is largely fueled by fats. That doesn't mean go full Keto (you'll still need some fast-burning energy in the form of carbs and sugars), but it does mean that including more fats in your diet will better prepare you for this type of work. Butter or olive oil, avocados, nuts, full-fat yogurt, peanut butter or almond butter, and fish are some great things to include in volume weeks.

A note on "Bonking"

The longer workouts mean that eating before and during workouts is super important. Those of you who have "bonked" midway through a session have learned this the hard way: on long workouts, if you haven't eaten enough food or had enough water, you experience an energy crash beyond normal fatigue. Dizziness, shaking, and lack of coordination are the most obvious signs. This is not something to "just push through", because your body has run out of things to turn into usable energy, and you are no longer benefiting from training.

Why isn't it beneficial to train through this state? "Bonking" means you are glycogen depleted. Glycogen is what allows muscular work to occur, and is most rapidly drawn from simple carbs and sugars. If there isn't glycogen left, the fibers doing the work will break down. It does not matter what your body composition is - doing work while glycogen-depleted will make your muscles start to burn themselves in order to sustain the activity (another term for this is auto-cannibalization). Obviously, that's not what we're going for, so **bring food for workouts longer than 90min, and start eating early and frequently through the workout.**

Races and intensity

For these workouts, we need a lot of energy in a short time period. The energetic demand of these workouts goes beyond what our bodies can supply through aerobic metabolism. Since we have to switch over to fast-turnover anaerobic metabolism, that means we need to switch to fast-processing foods, and energy that our body can access on demand. This means making sure you have enough carbs and sugars in your system before (and during) an intensity workout. Most endurance athletes are familiar with carbo-loading the night before a race, which is a good habit to be in. A simple guideline for fueling for intensity workouts is to have a carb-rich breakfast a few hours before, and snack on simpler sugars like fruits right before the workout or race.

Strength & Agility

These functions rely heavily on our fast-twitch muscle fibers, which don't get much action from our OD's. Strength and agility weeks will probably make you more sore than normal, so make time to foam roll, stretch, and make sure you're getting adequate protein and hydration following strength & intensity workouts!

Some endurance nutrition resources:

Shalane Flanagan's cookbook *Run Fast, Eat Slow*

Maddie Alm's *Fueling Forward* ([website](#) & [instagram](#))

Extra Resources

Here's a list of some of our favorite sources for training & nutrition. They are listed here because they either a.) present peer-reviewed studies and information in a way that is accessible to the public or b.) they're fun endurance/nordic stories.

Disclaimer: Be discerning when researching training or performance nutrition. There is no shortcut to improving as an athlete, and a focus on body composition or rapid improvement rarely leads to sustainable or healthy changes. Fad diets and fitness trends are often marketed as cutting-edge sports physiology. Bear in mind that even good information may not serve your purpose. What works for someone else, whether it's an Olympian, your mom, or your training partner, may not work for you.

The more ownership you would like to take with your training, the better, so we fully support exploring things outside of the normal training plan. Here's a few guidelines for safely implementing something you'd like to try:

1. If you're thinking of making any major changes to your diet or routine, check in with a coach.
2. Keep it simple - make one change at a time. Changing several habits at once makes it almost impossible to tell which new behavior actually caused the change.
3. [Log your training](#) - odds are, you won't see or feel any results immediately. Having a training log makes it easy to see long-term change that may be invisible day-to-day.

Training resources

[Nordiq Canada's training matrix](#)

[FXC Manual](#)

Books

Title - Author

Training for the Uphill Athlete - House, Johnson, Jornet

Brave Enough - Diggins

The Science of Running - Steve Magness