

Ski Performance Breakthrough



Chapter 5

Developing a resourceful body

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Skier: Gavin Kerr-Hunter, Director of Snowperformance. Photo: Hugh Monney

Developing a resourceful body

Training for snowsports, training for life

When you become a better athlete, sports become easier. It's that simple.

Many skiers arrive on skis, for the first time each winter, a little lacking in this area, so let's identify some core physical abilities, that will improve your athleticism, and see how you can develop them.

But before that, here's the most important factor of all:

your body has a miraculous ability to change.

All you need to do is give it the opportunity and it will adapt. This ability is your birthright and forms the basis for all sporting development, including the development of your underlying athleticism.

Just consider for a moment: it is possible to allow your body to become stronger, more flexible, better balanced, better coordinated, etc. All you need to do is provide the opportunity for these changes to take place and your body will take care of the rest.

So, in this chapter, I suggest several activities that will prepare your body to excel, when your skis hit the snow.

And, don't worry, these activities really should be *fun*. You don't need to waste your time with activities that you don't enjoy. They won't be effective for you, in any case. Here's why.

Firstly, you are a human being, not a machine.



Physical resourcefulness in action.
Skier: Ross Nelson, BASI International Ski Teacher
Photo : Hugh Monney

For centuries, artists, poets and philosophers have struggled to capture the essence of what it means to be human.

And they probably will for centuries more, but here's a summary of the work in progress:

Mind, Body, Spirit.

This implies that we need to engage all three of these aspects, if we are to be completely involved in any activity.

Something that you find boring will cause a lack of motivation.
Something that you enjoy will make you feel great!
That's so simple and so effective.

Please stay with me here, because this is not trivial.
Pleasure inducing *dopamine* is released by your body, to sustain you and reinforce activities that you enjoy. This is a very powerful process that reinforces the actions you enjoy.

The trick here is to use this process to your advantage.
I'm not suggesting a life of indulgence, that's a sign of a lack of balance, I am suggesting that there is a smart way to work with yourself, so that you make the progress that you are aiming for *and* enjoy yourself along the way.

Plus, at specific stages of training, we know that relatively high volumes of the activity are required, both to develop physical conditioning and to promote technical development.

So you really need to choose activities that you find enjoyable, to avoid boredom and drudgery.



The back of beyond, off piste in the Andes. This group of skiers needs to be resourceful, in this remote environment.
Photo: Hugh Monney

Seven physical qualities

I'm going to discuss seven core physical qualities that will improve your general athleticism, your snowsports performance and, probably, your quality of life.

They are: aerobic base level, flexibility, coordination, agility, balance, strength and power.

I'm going to propose several ways that you can improve these qualities, by taking part in enjoyable activities.

For various artistic, poetic, philosophical and scientific reasons, it's important that all of the activities considered are FUN! Choose those that you like the most and enjoy yourself!

Core Ability 1: Aerobic base level

This is a very important physical quality, that has very many components that have to dovetail together, to produce their benefits for you.

If you have a high aerobic base level, you are able to:

take large amounts of air into your lungs

extract the oxygen, in the air that you breathe, efficiently

pass it to your muscles, via your blood flow, through an efficient, well developed system of arteries and capillaries

combine it with the fuel in your muscle cells, to produce energy

remove waste materials from your cells, into your bloodstream



*Physical resourcefulness can be called upon suddenly.
Skier: Sean Langmuir, Olympian, formerly Coach for the
British and Canadian ski teams. Photo: Hugh Monney*

transport the waste back to your lungs, through a well developed system of veins and venous capillaries

breathe out the waste gases, to clear your lungs and prepare them for the next inhalation.

And, of course the increased blood flow, is driven by your well trained heart.

You'll see that this process involves several systems, working in a complex, coordinated way. Each system is improved by aerobic training, as is the coordination of the whole process.

With everything in good shape, a high aerobic base rate allows you to stay active, and performing at a high level, without undue fatigue.

By contrast, a poor aerobic base level causes early fatigue, which reduces the amount of skiing you can do *and* causes physically and technically clumsy performances.

So if you only improve one quality listed in this section, this is the one that will take you furthest.



A high aerobic base level is required for prolonged exercise at high altitude. Your summer training improves your powder tracks! Photo: Hugh Monney

How to

The real miracle is that this complex system adapts readily, if you just use it! Exercise that raises your pulse rate and increases your breathing rate, will automatically help your aerobic system to develop.

To begin with, the exercise can be gentle, just going for a walk is a great way to begin. Once you are up and about on a regular basis, you might choose to take up more vigorous activities, to keep the aerobic ball rolling.

The big four activities here are running, cycling, rowing and swimming. Choose the one that suits you best and get going. You can even go for three of them and become a triathlete!



Aerobic base level - important for bump skiing.
Skier: Dani Boshier, BASI International Ski Teacher
Photo: Hugh Monney

Safety first

Anyone with serious health issues will need to seek professional medical advice before beginning a programme of exercise.

Also, it's important to develop good technique to avoid injury, because you will be performing high volumes of this type of training.

Don't swim poorly and destroy your shoulders and knees. Seek out professional help.

Don't become the jogger who makes track coaches wince, with an up and down bouncy style that damages your body. Find help and great shoes.

Don't damage your knees with a poorly set up road bike or mountain bike. Get a great set up and learn how to develop excellent riding technique.

Respect your back, if you are a rower; develop accurate techniques that improve your health, rather than undermine it.

What does it do?

You're working out your heart, improving the performance of your lungs, developing the supply of blood to your muscles, improving the ability of your muscles to use the oxygen supplied to them and to get rid of waste, and much more.

Secrets of the champions

Herman Mayer, many times the men's GS World Cup Champion, develops his high aerobic base level on his bike.



**Great high altitude off piste skiing, after a hike!
Aerobic base level to the rescue. Skier: Paul Morris**
Photo: Hugh Monney

Core Abilities 2, 3 & 4: Flexibility, Coordination and Agility

Obviously, these three abilities are different from each other, but there are many fun activities that develop all of them, so I've grouped them together.

Poor flexibility can lead to injury as well as to limited performance. But a *double dose down side* also means that there is a double benefit when you reverse the trend and improve this quality. *Be flexible, feel free.*

Between them, flexibility and coordination affect your posture, the rate and range of your movement, the quality of your movement and so, your agility.

You'll see that, if your aerobic base level keeps you in the game, the qualities of flexibility, coordination and agility play a large part in determining *how well* you can play the game.

The importance of including **flexibility training** in your activities should not be overlooked. Many activities can shorten some muscle groups.

For example skiing, running and cycling can all shorten your hamstrings, over a period of time. So if you are a skier, who enjoys running and/or cycling for aerobic work outs, you could be setting yourself up for a hamstring injury, unless you address the issue in your flexibility training.

Tai Chi and Yoga allow your muscles to lengthen, and your connecting tissues to become more elastic in their behaviour, which increases your flexibility.

There are some specific stretching routines which can help to achieve the same outcome, but take care not to strain.

Becoming more flexible involves developing your patience, so don't rush at it.



Flexibility, coordination and agility, in action.
Skier: Peter Kuwall, BASI International Ski Teacher,
Director of BASS Chatel. Photo: Hugh Monney

How to

There are many enjoyable activities that develop flexibility, coordination and agility. Choose any of these and you'll go a long way:

Yoga, Pilates, Chi Kung, T'ai Chi, most martial arts, gymnastics and dance.

All of these activities have an initial effect, but they really start to work their magic for you over the medium and longer term.

What does it do?

Developing coordination, means training your central and peripheral nervous systems and their effect on your muscles and joints, and so your limbs. This affects the quality of your posture and the quality, timing and intensity of your movements.

Flexibility and coordination have a critical influence on agility, strength and power, which affect the athleticism of any performance. They also affect balance, but more of that in a moment.

Yoga, Chi Kung and Tai Chi also train your central nervous system, clearing it of junk traffic that clogs the system. This leaves the nerves free to pass on the signals that you need for your performance, improving your balance and coordination.

They also help you to develop and reinforce healthy movement patterns, the basis of all athletic movement.

Safety first

This is a great place to mention the issue of warming up before sport.

A well designed warm up will activate your joint mobility, which changes the chemistry of your joint fluid, preparing it to protect the joints during performance.



Coordinated movements determine the quality of performance.
Skier: Hugh Monney, BASI International Ski Teacher,
Director of the BASS Network. Photo: Tim Hall

It also activates the elasticity of your ligaments, tendons and some muscle fibres. A good warm up then moves on to involve gentle use of the major muscles, which then become more pliable and ready for performance.

The intensity gradually increases until you're ready for the full activity.

So, good warm ups usually involve some gentle movements standing still, then some easy activity, gradually increasing the intensity.

The reverse process helps you to cool down effectively, after performance, which prepares you to perform well during your next session.

And remember,

becoming more flexible involves developing your patience,

so don't rush at it.

Secrets of the champions

Herman Maier, many times men's GS World Cup Champion, and many of his fellow Austrian ski team members, practice Chi Kung and T'ai Chi to develop balance, coordination, agility and an effective central nervous system.



Complex, coordinated movements. Telemark skiing in a blizzard.
Skier: Elaine Adam, BASI International Ski Teacher.

Photo: Hugh Monney

Core Ability 5: Balance

Snowsports are balance sports. So it's really useful to be good at balancing.

How to

You can take up the same martial arts discussed above, and you can train with a balance board, a slack rope, a Swiss ball and, if you are athletic, an evolution of the skateboard, called **Carveboard**.

A good balance board is great for helping you to tune in to what balancing is really all about. You need to feel this, not read about it.

The slack rope is similar, even more challenging, lots of fun and gives you a pretty good workout!

Carveboard, is an ultra steerable long wheelbase skateboard, which allows you to link beautiful arcs, just like skiing, snowboarding and surfing.

These activities are also excellent for developing your **core strength**, which is an important aspect of your general athleticism.

Safety first

Tying a slack rope isn't that tricky, but you do need secure anchor points, decent knots and a sound rope. And an area that allows you fall off without too much hardship.

Balance boards can have you over in a flash, so keep the area clear of obstacles and consider using friends for physical support to start with and to act as spotters a little later. You'll have more fun doing this with friends anyway.

Safety during martial arts is a priority, so if you choose those activities, join an official programme.



*Highly refined balance in action.
Skier: James Lamb, BASI International Ski Teacher,
Director of BASS Morzine. Photo: Buster Cheetham*

Riding any skateboard is less tricky than it appears, once you know what you're doing, but you do have to take it easy to begin with, and use suitable safety gear.

What does it do?

You're developing your central and peripheral nervous systems again, plus the coordination of the muscles that correct for loss of balance, including the development of core stability.

You are also helping your nerve pathways to grow and the synapses in your brain to make new connections.

Balance work really does rewire your body!

These activities are entirely in your body. Your conscious mind is not wired into this process, so you cannot get better at this by reading about it or thinking. The secret is, just do it.

Secrets of the champions

Ingemar Stenmark walked a slack rope and rode a unicycle. He was so good that he sometimes rode the unicycle *on* the slack rope.

He dominated the men's technical skiing events for about 15 years, during his record breaking career.



Balance in the bumps.
Skier: Ross Nelson, BASI International Ski Teacher.
Photo : Hugh Monney

Core Abilities 6 & 7: Strength and Power

'Strength' means the maximum effort you can make, which translates into the maximum load you can move.

'Power' is a combination of the effort, the distance through which it is moved and how quickly it is moved.

So power training combines strength with your rate and range of movement, and the quality of the coordination, which will include balance if the activity is free. (For example, working with free weights, working on a balance board, skiing, etc.)

Snowsports athletes need to be powerful. Remember that strength is one of the components of power, so you may need to do some specific basic strength work to achieve this, in addition to increasing the effective range of your movements and the rate at which you can use them.

It's worth noting that a light athlete can often generate as much power as a more heavily built athlete, by using a larger range of movement, deployed more rapidly and with more accurate coordination.

How to

You can use gyms, which have the advantages of machines that may to keep the activity safer and qualified staff to help you.

You can also adapt your running, swimming, rowing or cycling workouts to include high power output phases, e.g. hollow sprints, fartlek training, hill climbs etc.

This has the advantage of developing coordinated power rather than just strength. And it's fun!



*Coordinated power, under high load.
Skier: Ross Nelson, BASI International Ski Teacher.
Photo: Hugh Monney*

Many skiers are underpowered for the activities they aspire to, often through a combination of not enough basic strength, under trained quality of movement and under developed balance.

Safety first

Basic strength training works on the principle of overload, which means low repetitions with a load that you can only just move. People do strain themselves with this type of training. So care and a controlled environment are called for. Go to professionals who can train you to do this safely.

What does it do?

Basic strength training causes micro tears in the muscle fibres. That's why it hurts.

Remember that there is also a coordination component to strength.

This means that you can get a great benefit by training with lower (safer) loads and learning to improve the coordination of your movements.

This *recruits* more of your muscle fibres and re-coordinates the order in which they activate.

So this aspect of strength training is more about using your existing resources to the best effect. It may be better for you to try this first, before moving into supervised overload training, if required.

Secrets of the champions

All snowsports athletes train for power and strength. The champions know the difference between the two and aim to maximise their power to weight ratio.



Managing high compressive loads, accurately, requires coordinated power.

Skier: Hugh Monney, BASI International Ski Teacher, Director of the BASS Network. Photo: Peter Kuwall

This means developing good basic strength, plus improving the components of power that rely on quality of movement (ie. rate, range, coordination, balance, muscle fibre recruitment).

Putting it all together

That's a lot to take in, so let's focus back on getting the maximum fun from activities that will help us with snowsports.

Here's how I use these principles.

I take part in all of these activities for fun and because I enjoy being active, but I'll list the core abilities they develop.

Remember, *you* might easily choose different activities to achieve the same effects.

Cycling

I ride a road bike for aerobic base level development and, later in the training process, I push the hill climbs, sprints and fartlek sessions.

Slack rope

I walk the rope to improve posture, balance, coordination, agility and core strength. It also has an excellent influence on relaxation and mental clarity.

A slack rope video made, to accompany this chapter, can be found on **BASS TV**, on the BASS website. Ebook readers can follow this link: [slack rope video](#)



Walking the rope - Hugh Monney. Photo: Anita LaPlain

Balance board

I use my balance board regularly, to improve and maintain balance, coordination and core strength.

The best I have found is the great series of boards from **IndoBoard**.

I'm impressed, so I negotiated a deal for BASS clients.

If you want to get hold of an **IndoBoard**, just follow the [IndoBoard link](#) on the BASS website.

You'll benefit from a **5% discount** if you use the special discount code **BASS**.

An IndoBoard video, made to accompany this chapter, can be found on **BASS TV**, on the BASS website. Ebook readers can follow this link: [IndoBoard video](#)

I practice **Chi Kung and T'ai Chi** for balance, coordination, agility, strength, power, flexibility, breathing and for training my central nervous system. This practice also relaxes me and helps me to keep things in perspective.

I do a little work with some light **dumbbells** to keep my shoulders strong. I make sure I keep them flexible, too. (Skiers often suffer from shoulder injuries.)

I fly my **power kite** on the beach for strength and balance, and to get out of the office.

I used to ride a kiteboard on the sand, pulled by the kite, which was great for balance, too.

But that was before the wheels were commandeered by my sons, for their go-kart!

I ride my **Carveboard**, an ultra steerable long wheelbase skateboard, which



IndoBoard provides an excellent workout for your core strength as well as helping to train your balance and coordination. Photo: Anita LaPlain

develops all the core physical abilities outlined in this article and brings them all together into a performance sport. And, most importantly, it's so much fun that you'll actually want to do it all the time.

Secrets of the champions

Top USA surfers and snowboarders use Carveboard for dry land training and fun. You can see action photos and video on the Carveboard website, just follow the [Carveboard link](#) on the BASS website.

I negotiated a deal for BASS clients. So if you want to get hold of a Carveboard, just follow the link to their site, or call Carveboard sports UK on 01277 219 600. You'll benefit from a **10% discount** if you use the special discount code **BASS**.

A Carveboard video, made to accompany this chapter, can be found on **BASS TV**, on the BASS website. Ebook readers can follow this link: [Carveboard video](#)

Summary

Seven core physical abilities are presented and discussed:
aerobic base level, flexibility, coordination, agility, balance, strength and power.

Some background and safety issues are discussed, along with enjoyable activities to develop the core abilities. Examples are given of champions who use these activities in their own programmes.

Becoming a better athlete prepares you for progress and success in snowsports. There are many excellent reasons why the training process should be fun.

This section also directs you to special discounts on **Carveboard** skateboards and **Indoboard** balance boards.



*Carveboard is a lot of fun. Performer: Hugh Monney.
Photo: Anita LaPlain*

I have worked with one of my regular clients, Dr Martin Breach, to help his company create

The SkiA Sweetspot Trainer.

It's a superbly effective balance trainer for skiers, which guides you to the sweetspot of your ski boots *and* helps you to retrain your movement patterns.

It's been trialled in ski schools across Europe and it has accelerated the learning of skiers from beginners to professionals.

This is a great way for skiers to develop balance and coordination, through the Summer months.

It also improves performance when used just before a session on snow. The user manual incorporates the principles used throughout this book.

The idea for the SkiA Sweetspot Trainer came about as a consequence of the work we were doing on centred balance, on Ski Performance Breakthrough clinics.

[You can get hold of it here!](#)



"The BASS Network endorses the use of The SkiA Sweetspot Trainer as a highly effective performance development aid for skiers."

[You can get hold of it here!](#)

