PSIA - Rocky Mountain Division – AASI

Rocky Mountain Ski Instructors Educational Foundation

HANDBOOK

"TEACHING the AGING POPULATION"

Adapted from PSIA-RM Seniors Accreditation 1991
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INTRODUCTION

This Handbook is the second-generation of materials developed specifically for teaching seniors the sport of skiing. Original materials were developed in the early 1990's for PSIA Seniors Accreditation. The Seniors Accreditation program has since been cancelled, but the information remains relevant and valuable! This Handbook is a living document that will be used for our new "Teaching the Aging Population" clinic. Additions will be made as our new program grows and develops.

RATIONALE

The population in the United States is growing older, and occurring at a rapid rate. The "Baby Boomer" generation is now in their fifties and sixties. Many are very active and a large number have discretionary income and the means to afford skiing. Instructors who know about the special profile of senior skiers will be more effective in working with this growing population of ski enthusiasts.

Snow sports have become more multi-generational. Families ski and snowboard together, with all different ages and abilities meeting together during a day on the slopes. Many older skiers are motivated to "keep up with their grandchildren". With new equipment and easy techniques, we can enhance *anyone's* enjoyment of skiing. The following manual provides insights into understanding the senior skier's unique characteristics and how to effectively teach to their individual needs.

WHAT IS A SENIOR SKIER?

If we look at chronological age as the only factor, we could say a senior skier would be in their 50s to 70s. Darrell Menard, MD and William D. Standish, MD define the characteristics of senior skiers in their book, ***The Aging Athlete***. They maintain that the rate of aging is highly individual and depends upon factors such as genetics, lifestyle, and disease processes. The net result of the aging process is a gradual impairment of organ systems so that functional reserves are gradually eroded, leaving one progressively more vulnerable to metabolic disturbances, environmental stresses and disease.

Regardless of the age or physical attributes of senior skiers, it is our job as instructors to assess their capabilities and create lessons that meet the needs of their individual profiles. The following are characteristics that instructors of seniors can be aware of when assessing older students.

PHYSICAL CHARACTERISTICS

As you assess your senior students, look for some of these characteristics and take them into consideration as you plan your day.

Skin – As people get older their skin becomes more sensitive to cold temperatures. Exposed areas such as the face and head need more protection from cold and wind chill. Hands and feet may be more susceptible to low temperatures. Also, exposed areas are more sensitive to ultra-violet rays. Greater care must be taken for protection from sun and cold exposure.

Eyes – Eyes must also be more diligently protected from the sun and other eye characteristics require special attention. The eyes of the senior skier do not adjust as quickly as they once did, especially when moving fairly rapidly while skiing. Older skiers take more time to focus from distant objects to closer ones. Bifocals and trifocals are a definite factor requiring special consideration. Fewer seniors utilize contact lenses than their younger counter-parts. Glasses fog more readily than goggles and create a visual impairment as well as being a general nuisance. Stigmatism and glass frames can affect peripheral vision. Wind and snow can make eyes tear, which can cause all kinds of performance problems. Depth perception also decreases with age. Various shadows and different intensities of natural light can make focusing difficult, especially while moving.

Sound – Sound can create a vast amount of stimuli for the nervous system to process. These sounds may not bother the experienced skier's ability to perform but will certainly affect the novice or older participant. Some senior skiers may have difficulty concentrating with too much noise distraction. On the other hand, those seniors with hearing aids and/or a small amount of hearing loss may also have performance issues.

As age increases, the performance level of the ear decreases, including our sense of hearing and balance. Thus, the ability to perform certain physical tasks necessary to ski can become more difficult. The blurred images, both visual and auditory, of other skiers passing (often too closely) may be disturbing. Crowded slopes, lift lines, food lines, restroom lines are all situations that senior skiers may find discomforting.

Body – Joints, tendons, ligaments, muscles, and bones are an integral part of skiing performance. There are definite changes in the make-up and performance levels of these various body components as a person increases in age. A good and well-maintained exercise program would certainly help these components work better. Unfortunately many seniors who come skiing and take lessons have not participated in such a program. Therefore, their muscles may be tight and constrictive, making it more difficult to perform certain physical tasks. Arthritis and other partially disabling diseases have an effect upon one's ability to ski. Strength and endurance are affected by an increase in age. The older body may

not be as acutely aware of the motion of joints and their various components. There may be increased accumulation of lactic acid in muscles during physical exercise.

The Aging Athlete, by Menard and Standish, denotes the following information relative to the bones and joints of the body: The greatest threat facing the elderly is osteoporosis. Osoteoporotic bone alteration could represent a serious threat to aging athletes, particularly if they begin their sporting program when they are 50 or older. (This would be of special significance to the senior student taking up skiing for the first time or after a long lay-off, and also to the one-week-a-year skier.) For those individuals who remain active throughout their lives, osteoporosis is less of a concern since physical activity appears to counteract the process of demineralization common in osteoporosis. Considerable research has focused on osteoporosis as a disease phenomenon and demonstrates that regular physical activity not only can prevent osteoporosis, but to some extent may even reverse the process.

In relationship to the connective tissue of the human body, it has been found that tendons and ligaments constantly undergo alterations in response to the external stresses to which they are exposed. (There are many of these in the sport of skiing!) Activity promotes connective tissue hypertrophy, while inactivity leads to atrophy. Collagen is a major structural element of bone, ligaments, tendons, cartilage, skin, teeth and blood vessels. There is a spontaneous process which leaves the aging collagen fiber progressively less compliant. However, this process can be influenced by several factors including physical activity and hormonal changes.

Physical activity enhances the rate of collagen turnover which effectively shortens the life span of the collagen tissues and serves to keep the connective tissue young by retarding the process of maturational stabilization. Tendons and ligaments are critical to the functioning of the musculoskeletal system. They lend support to the bony tissues and permit energy transmission from the musculature. Muscle strength decreases beyond the age of 50 such that by the age of 65, a person maintains only 75% to 80% of their peak strength. This decline parallels the loss in muscle mass that also occurs with aging.

The aging athlete is usually the victim of two sets of injuries: those that occurred in his/her youth (ski instructors should always ask for this information upon meeting students!), and those that result from current activities. Aging athletes are by no means immune to injuries of high velocity, but their major menace is that of degenerative tissue problems. These are wear and tear disorders resulting from chronic overuse or trauma experienced over years of athletic stress.

Breathing- Seniors may not be as efficient in their exchange of oxygen and carbon dioxide as their younger counterparts. Adjustment to higher elevations is

a factor to consider when working with seniors. Not all seniors are in good physical condition and just plain breathing at high altitude while skiing may become a problem! In ***The Aging Athlete****,* Menard and Standish discuss certain aspects of breathing capabilities in older athletes. They maintain that there is a decline in the use of oxygen while exercising at a maximum as a person matures. This decline is a direct result of the reduction in the maximum obtainable heart rate that occurs as people become older.

In addition, there is an increase in the time required to return to resting heart rates following exercise. The consequence of these changes is a limitation of the cardiac output and maximum aerobic capacity. Performance of the respiratory system also deteriorates with age. Many of the changes which occur manifest as an increased sense of respiratory effort experienced during exercise. As a consequence, the older athlete will experience more breathlessness during a given athletic endeavor than a younger athlete. The aging process encourages a number of changes in the respiratory system. The ability of the lungs to have efficient elastic recoil is affected. There is also a reduction in the strength of the muscles of the respiratory system. The result of these changes is a reduction in the arterial oxygen pressure of aging athletes. Thus, during exercise they are unable to deliver the same quantity of oxygen to their working musculature as their younger counterparts. Regular exercise is the only solution!

Reaction Time- The ability of the senior skier to react quickly is reduced. Skiing demands quick responses of various parts of the body to implement the necessary physical skills. Menard and Standish discuss the function of the central nervous system and report that there is a decrease in nerve conduction velocities as much as 15% by the age of 80. The ability to coordinate complex motor activities and maintain balance also diminishes with maturity. In terms of deteriorating function, the aging athlete experiences a slowing of reaction time and difficulty in preserving superior skill levels. While decreases in function of the central nervous system are classically attributed to aging, they can also be exaggerated by inactivity. Because of this, it is important for senior skiers to rely more on technique and less on reflexes!

Feet- Feet play such an important part in skiing, and aging affects the function of the feet considerably. Feet tend to get wider with age and pronation can become more pronounced. The feet also become bonier. Bone spurs that develop with age can make boot fitting difficult. Always take the time to asses your senior student's equipment, and spend particular attention to their ski boots!

Many seniors may require special equipment or procedures in their instruction to help them enjoy their day more fully. Some of these may include:

- special boot fits
- orthodics
- no-fog goggles that fit over glasses

- boot and glove warmers
- pole grips for arthritic fingers and wrists
- knee braces
- shorter skis
- extra warm clothing
- helmets
- other as needed!

PSYCHOLOGICAL CHARACTERISTICS

Fear- As people get older, their concern about injury becomes greater. Skiing can be considered a high-stress activity for those who are not as daring as they once were! Injuries to the body tend to mend slower and with more difficulty for the senior population. Lifelong fears may also become more apparent with age. Fears that were not self-evident to a younger individual can quickly increase under stress. For example, driving a car may become more stressful with age. With long-time driving history, psychological adjustments can be easily made. But with skiing, (not done regularly), latent fears may become more pronounced:

- fear of speed
- fear of lack of control
- fear of heights
- fear of peer pressure
- others

Concentration- Senior skiers may have a good ability to concentrate on one task at a time, due to long-time practice in the skill. However, distractions inherent in skiing can cause problems for senior skiers. Instructors should remember to provide one direction at a time, or coach one skill at a time in a consistent environment in order to be most effective. For example, a blowing, snowy, cold day in crowded conditions with less than perfectly smooth, groomed snow may be too many distractions for a senior student to work on any one skill. Be aware of this tendency and make adjustments in lesson plans in order to be most effective.

Motivation- During your assessment of senior skiers, pay close attention to their motivation for being in the lesson. Whether a desire to keep up with grandchildren or to feel safer while skiing, the underlying motivation is one of the most important things you can assess. The motivation will provide you with clues to help you tailor the lesson goal, content, pace, and outcome. Students will be more psychologically comfortable if they know you care about their reasons for taking a lesson and tailor the lesson in a personal manner.

TEACHING SKILLS TO SENIORS

Balance & Stance- Some seniors' physical and psychological characteristics can affect their ability to balance. A natural, relaxed stance can be inhibited by stiffness and decreased eyesight or inner-ear function. Slight adjustments to equipment can enhance stance and balance for any skier, and especially for seniors. It is best for the instructor to work with the student's own abilities and/or inabilities and create reasonable accommodation around their capabilities. Note which movements are working and which are not, and start from the positive!

Sometimes instructors can belabor the skill of stance and balance to the exclusion of just skiing and having fun on the mountain. Remember that you may never get perfection in your senior skiers! Adjust terrain, pace, equipment, turn-shape and speed to compensate for some stance and balance issues that may become tedious when over-emphasized during a lesson.

Rotary Movements- Whatever "era" a senior skier learned to ski would determine a lot about their preferred turning mechanism. Some senior skiers may utilize rotary movements or counter-rotary movements simply because that was the technique used at that time they learned. Regardless, the new revolution in equipment should make it easier to effect changes in long-ingrained habits. It's an easy sell to get seniors to work *less* to make a turn!

It may be more realistic to expect your students to "tone down" ingrained habits rather than completely relearn them. Careful assessment of your student's rotary movements will help you determine where the rotational movement originates from and to what extent it enhances or inhibits the use of modern day equipment. Once assessed, take time to help your student understand the nature of their current movement patterns and provide the explanations and activities that will anchor the new learning.

Utilize "replacement movements or focus" when possible. Trying to have a senior student re-learn everything they know about skiing will be far too tedious and frustrating, as well as takes away from the enjoyment of just making turns in the mountains. For example, if your student utilizes too much upper body rotation in their skiing, focus them on edging their skis earlier in the turn so that the skis "hook up" and turn for them. Emphasizing an *alternate* skill can sometimes be a very effective way to tone down over-utilized skills.

Edging Movements- Edging movements can be accomplished in many ways. Instructors may preach articulating the foot, tipping the feet and/or ankles, moving the knees or hips into the turn or angulating at the hip. All of these movements are effective ways to create more edge angle. Knowing that many seniors have limited range of movement, there may not be one answer for them to create adequate edge angle. Angulation may be one of the more difficult movements for seniors, and creative compensating movements should be

allowed. Utilize shallow terrain to allow your senior students to experience new movements and feel new sensations. Edging will probably be one of the more important skills to enhance in order to really allow the modern skis to work, so spend the time needed to create understanding, movement awareness and results!

Pressure Management Movements- Imagine being a senior skier who utilizes up-down movements to weight and un-weight the skis, and believes that skiing on one ski at a time is the way-to-go! These antiquated movement patterns may have worked like a dream in the days when skis were over your head, but is completely wasted energy in today's terms. In the spirit of "toning down movements", imagine how relieved your senior students will be if you give the reason to keep weight on both feet and to eliminate their up and down and foot-to-foot movements!

Of course not all senior students will come to lessons with pre-learned movement patterns from some by-gone skiing technique. Note that teaching the subtle movements used in modern skiing to a new learner may be more challenging than toning down the gross, or large movements of a veteran skier. "Getting the feel" for subtle rotary, edging and pressure-management movements may be more obscure to the senior student. Their sensitivity to subtle movements and their ability to connect with the consequent results may take longer to anchor. Be sure to take time with simple drills or exercises that create awareness of subtle movements and the results of effective control. After all, most seniors are looking for comfort and control!

SUCCESS TEACHING SENIORS

Utilizing our current teaching models definitely creates an advantage for ski instructors teaching seniors. It's all about creating relationships and rapport, assessing motivation, understanding and movements, and then facilitating a tailor-made lesson plan that creates a positive learning experience.

The Teaching Model (*Vail/Beaver Creek Alpine Teaching Handbook)* and the GCT "Guest Centered Teaching™" Model *(Winter Park Resort),* provide an excellent roadmap to help instructors create great learning experiences. Both models refer to assessing the student, determining goals and motivations, developing lesson plans and facilitating learning. Utilizing these models works for kids and adults, skiers or snowboarders *and* of course, seniors.

Keep it Simple- One of the tendencies for many instructors is to over-teach. With the best of intentions, instructors add layer upon layer of topics and teaching until students can't do anything at all! Instructors of senior students must take great care to keep things simple, working on one topic or theme at a time while having fun enjoying the mountain. Senior skiers may need a little

more time to absorb the concept and translate their understanding into movements.

Never Underestimate- Being older is not synonymous with incapable! Senior skiers need to be respected for their vast knowledge and life experience. They typically do not want to be talked down-to, "baby-sat" or written-off as unable to improve. The key is to listen and find out the best starting place to successfully move forward on *their* terms. This forward movement may be in small steps or in giant leaps! Instructors should not assume that just because someone is over 60 that they can't learn or that their learning style and pace is in a stereotypical mold.

From Information to Reality- A lot of the information provided in this handbook has been generalized regarding the deterioration of physical abilities in the aging population. The reality is that many fifty to sixty year-olds are in excellent health, extremely active and absolutely able to learn and improve their skiing! It goes back to always taking time to assess the student. As you asses:

- Understand the general characteristics apparent in the aging process.
- Look and listen for clues that will help you meet any special needs.
- Pay particular attention to the conditions of the day and make appropriate adjustments.
- Have fun!

Pacing Information and Movement- Watch your senior students closely to make sure they are not getting too overloaded with information or too physically tired. Take breaks when needed to relieve tired muscles. Some seniors may be too proud to tell you they are getting tired, or they may need more frequent rest-room breaks and not want to say anything. Offer a stop when convenient mid-morning and mid-afternoon. They just may take you up on it!

Relationship, Relationship, Relationship- Get involved with the personal side of your senior students. Talk about their families, their life's work, their hobbies and their dreams. Everyone will have a much more rewarding lesson experience if the relationship is more than just making a better turn!

There is tremendous opportunity in developing a lesson clientele of senior skiers. Consider the information in this handbook as you create long-lasting relationships with your senior students and their multi-generational families. It's all about creating great vacation experiences and life-long memories.