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Senior Population's Needs

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What happens as we Age?

Every body system is affected. The amount they are affected depends on genetics, diet, physical activity and social interaction. We can not change our genes but diet, physical activity levels and social interaction can be incorporated to improve our quality of life as we age. Let's take a closer look at what happens as we age and how exercise, diet and social interaction can delay or even stop the negative effects of aging.

All of the senses are affected as we age. Vision sharpness decreases, especially the ability to see fine print, like the phone numbers in the phone book. Eyes can become sensitive to bright light.

Hearing is also affected. Acuity decreases as well as discriminating a sound from background noise. Having a conversation at a party where there is a lot of background noise becomes difficult. Seniors also become sensitive to loud noise such as the bass on a music tape.

Touch is another sense that becomes sensitive due to the skin thinning as we age. Seniors are much more aware of temperature. One degree feels like five to them. They are also more sensitive to pain.

There is a decline in the effectiveness of the taste buds to discern flavor, salty, sweet, etc. There is also a decline in the awareness of thirst, which allows seniors to become dehydrated easily. Dehydration affects the urinary system by causing constipation. Dehydration also causes fluid retention. Fluid retention can also be caused because of a decline in the kidney's efficiency as we age.

Our body is greatly affected as we age but this is the area that is most responsive to improvement through physical activity.

- Our height will decrease by 1 to 2 inches, women even more.
- Our abdomen and chest increases while our arm and leg size decreases.
- Muscle is lost and replaced by fat.
- Our bone density decreases.
- Our muscle strength decreases, the back muscles decline the fastest.
- Flexibility also decreases.
- Muscle imbalance and weakness contribute to bad posture, which causes poor balance.
- There is an increase in muscle cramps due to bad circulation and dehydration.

Our cardiovascular system becomes less effective as we age due to less elasticity in the blood vessels. Blood pressure increases due to narrowing of the blood vessel walls and dehydration. Lung capacity decreases due to poor posture and shallow breathing.

The nervous system is also affected as we age. The nerve to muscle reaction time increases. This will affect senior's balance and coordination. They also need more processing time.

If we have seniors in our classes it is imperative that we understand these aging processes.

For instance, if we want to keep seniors, we would not want to choreograph our whole class in 8 count freestyle. This is where the move changes every 8 counts and there is no repeating. Our seniors need at least 8 repetitions to learn the move because of the increased processing time; taking the message from the brain, through the nerves, to the muscles. Understanding their increased sensitivity to temperature change should make us more sympathetic when they complain about the pool temperature. They are not just being grumpy! It really feels like we are putting them in ice water when the temperature is 82. We now understand the need to use instrumental music instead of vocal so that they can hear our voice better. It is not only important for us to understand the aging process, but also how we can combat it through exercise, diet and social interaction. We need to educate our seniors on the benefits they are receiving by coming to the water.

Water exercise benefits our senses. Circulation and body awareness are stimulated by the warmth and massaging of the water as it moves around our body. This water movement also stimulates digestion and elimination, which helps counteract constipation. Fluid retention is reduced because of the water pressure, which accounts for why our seniors need to go to the bathroom as soon as they leave your class. Studies have shown that the movement of the water tones the eye muscles that affect focusing.

A study conducted with seniors that had all reached 100 years of age and were living independently showed that the common factor they all had was continued social interaction. Group exercise improves seniors mentally and psychologically. Following the instructor's directions improves memory and self-image. Exercise reduces stress and anxiety. Group interaction leads to acceptance that we are not alone in our aches and pains.

The benefits of water exercise to our body goes on and on. Let's start with the skeletal system. Impact is necessary to build bone. Research has shown that although we lose 75% of our body weight when we are submerged to chest depth water there is still enough impact to build bone. Exercise increases the flow of the synovial fluid to the joints, which helps them to stay healthy and slows the degeneration of the joints. The buoyancy of the water assists in increasing range of movement of the joints.

The water is a wonderful place to work the muscles due to its resistance, which is 12 to 14 times more than air. You have a liquid weight machine when you get in the pool.

Another plus is that you get a balanced muscle workout if you are pushing against the water in both directions. An example of that would be the Russian dance kick, as you straighten your knee you work the quadriceps, and as you bend your knee you work the hamstring. If you did this move on land you would work the quadriceps as you straightened your knee, but as you bend your knee gravity does not work the hamstring. The best perk about working out in the water for your muscles is that the harder you push against it the harder it pushes back. That means, as your muscles get stronger you can push harder continuing to see improvement in muscle strength and endurance. This increases muscle mass, which increases metabolism, which reduces body fat. The buoyancy of the water also improves muscle flexibility and reduces muscle tremors. IF we incorporate low intensity aerobics into our senior water class we will help our seniors exercise their cardiovascular systems. The heart becomes more efficient, slowing the hardening of the arteries. This in turn lowers blood pressure. Aerobic activity increases the H.D.L.'s or the good cholesterol, which helps to clear the plaque from artery walls and helps to regulate blood sugar. Due to the water pressure and the increased activity we must breath deeper to get the oxygen the muscles need down into the lungs. This improves lung capacity.

Some other benefits that happen as we travel though the water are strengthening of the core trunk muscles and improvement in balance and coordination. We push against the water as we travel making a current this causes our trunk muscles to tighten. If we change directions and planes we improve balance and coordination by incorporating different muscle groups while still maintaining proper body alignment.

Now that we know that water exercise can combat the aging process, how do we as instructors make sure our participants are receiving these benefits? Incorporating the following ideas into your class will accomplish this.

1. Walk forward and backwards in a straight line with the eyes closed to utilize the other senses to maintain balance and keep weight centered.
2. Encourage your participants to lengthen their stride in the water where they do not have to worry about falling.
3. Constantly have participants focus on posture through verbal and non-verbal cues. Encourage them to look straight ahead, ears over shoulders. When walking on land eyes should be focused 8-10 feet ahead of them. If they are worked about tripping on something, focus on it until you pass then bring the eyes back up and focus 8' ahead once again. This keeps them from throwing their weight forward and rounding the upper back and neck.
4. Walk on tip toes forward and heels backward while reinforcing posture.
5. Improve balance by standing on one leg longer. Example march, march, march, hold with one leg lifted.

6. Improve coordination by traveling backward, diagonally, and sideways or by combing moves. Example march, march, march, Russian Kick.
7. Improve coordination by combing planes. Example Side step for 8, Lunge for 8.
8. Improve reaction time by doing start/stop moves. Example jog, stop standing on one foot. Jog, stop standing on the other foot. Try repeating while traveling backwards.
9. Improve breathing by encouraging long, deep, breaths in the nose, out the mouth.
10. Keep your senior participants warm by interspersing low intensity aerobics with range of movement and strength training exercises.
11. Use an active stretch format if the water is below 85 degrees to keep your seniors warm and improve flexibility.
12. Encourage full range of movement with every move. When jogging bring the knee up to the hip and roll through the foot, heel down.
13. Do stretching away from the wall to improve balance and flexibility.
14. Make sure to stretch the pectorals, low back, hamstrings and hip flexors. These are muscles that tend to shorten and tighten as we age due to overuse, bad posture and omitting stretching in our daily lives.
15. Strengthen the core muscles by having your participants pull their navel in and up throughout the class.
16. Incorporate abdominal strength exercises into your class. Example using a noodle under the shoulders, hand in the water in a kneeling position, shoulders, hips and knees lined up. Exhale and contract the abs as you pull knees up and into the chest. If participant has had a hip replacement, stop even with the hips. Inhale and return to kneeling position.
17. Encourage interaction between class participants. Celebrate birthdays and anniversaries, getting together for lunch once a month after class, etc.
18. Encourage participants to drink 8-10 glasses of water a day to keep from getting dehydrated. Every body system is affected by dehydration.
19. Including 5-8 fruits and veggies to get daily intake of vitamins, minerals, and fiber.

*Remember to share the benefits your participants are receiving as they do each move. *

11. T or F Exercise, diet, and social interaction are all components of improving quality of life as we age.

12. T or F Core muscles can be strengthened with traveling moves in the water.

13. List 3 exercises to improve balance?

14. T or F Use static stretches in water colder than 85 degrees

15. List 4 muscles to stretch to help with posture problems.

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