

Exercise beyond menopause: Dos and Don'ts

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ABSTRACT

With a significant number of women belonging to the status of menopause and beyond, it is imperative to plan a comprehensive health program for them, including lifestyle modifications. Exercise is an integral part of the strategy. The benefits are many, most important being maintenance of muscle mass and thereby the bone mass and strength. The exercise program for postmenopausal women should include the endurance exercise (aerobic), strength exercise and balance exercise; it should aim for two hours and 30 minutes of moderate aerobic activity each week. Every woman should be aware of her target heart rate range and should track the intensity of exercise employing the talk test. Other deep breathing, yoga and stretching exercises can help to manage the stress of life and menopause-related symptoms. Exercises for women with osteoporosis should not include high impact aerobics or activities in which a fall is likely. The women and the treating medical practitioner should also be aware of the warning symptoms and contraindications regarding exercise prescription in women beyond menopause. The role of exercise in hot flashes, however, remains inconclusive. Overall, exercising beyond menopause is the only noncontroversial and beneficial aspect of lifestyle modification and must be opted by all.

Key Words: Bone health, exercise, menopause

INTRODUCTION

The most remarkable demographic change observed in the new millennium is the increased life expectancy of women in India. It is estimated that by the end of 2015, there will be 130 million elderly women in India, necessitating a substantial degree of care.^[1] Menopause brings in a whole lot of changes in the body of women and in most of them leads to troublesome symptoms namely vasomotor, sleep disturbances, fatigue, aches and pains, altered cognitive functions, genitourinary problems like vaginal dryness, irritation, recurrent urinary tract infections, and weakness of connective tissue supporting the pelvic viscera.^[2] All these short and medium-term effects influence the quality of life of these women adversely. Long-term sequelae, such as, osteoporosis, sarcopenia, pathological neurological problems and cardiovascular events also tend to increase.^[3] The lack of estrogen beyond menopause also compounds the cardiovascular disease risk factors from a female to a male pattern. This puts these women at an equal risk of coronary heart disease as their male counterparts.

The problems arising due to the hypo-estrogenic status should be managed by planning a good health program strategy, involving lifestyle modifications. A short-term hormone therapy in minimum doses is recommended exclusively for symptomatic women, after proper counselling.^[4,5] It is the mainstay of the treatment of vasomotor symptoms and is proclaimed to be comparatively safe in women of 50 to 59 years of age.^[6] The same may not hold true for older women. There has been a marked controversy in the menopausal hormone therapy following the publication of Heart and Estrogen/progestin Replacement (HERS),^[7] Women's Health Initiative (WHI) Trial^[8] and Million Women Study (MWS).^[9] This has led to polarization of opinion regarding hormone therapy all around the world. The acceptance of hormone therapy is quite low in India.

The social scenario of senior women in our country is sadly that of reduced activity. Women often exercise less

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when they enter menopause, which can lead to weight gain. To further complicate matters, the metabolism is also decreased. One reason of this metabolism decline with age is the loss of muscle mass (about half-a-pound a year). Muscle burns more calories than fat, so whenever the muscle is not preserved with weight training exercise, the body simply does not burn as many calories. There is also a tendency to increase the intake of calories. As the metabolism drops, many women do not adjust their calories accordingly, which often leads to weight gain. The prevalence of the metabolic syndrome is reported to be significantly higher in postmenopausal women in India.^[10] Finally, the role played by the genetics has also got to be emphasized. The genetic makeup and the site predisposed to inches gain and storage of fat also plays a role in weight gain, making it more difficult to control.

Despite all the physiological changes, menopause should not be viewed as a sign of impending decline, but rather a wonderful beginning of a good health program including lifestyle changes in diet, exercise, including yoga and limiting smoking as well as alcohol.^[11]

BENEFITS OF EXERCISE

The most important, noncontroversial and simple thing everybody can and should do is to exercise. The benefits are-

1. Exercise increases the cardiorespiratory function. If done regularly, it reduces the metabolic risks associated with declining estrogen. It increases HDL, reduces LDL, triglycerides and fibrinogen. There is an additional benefit of a reduced risk of high blood pressure, heart attacks, and strokes.
2. Exercise can help create a calorie deficit and minimize midlife weight gain.
3. It increases the bone mass. Strength training and impact activities (like walking or running) can help to offset the decline of bone mineral density and prevent osteoporosis.^[12]
4. It also reduces low back pain.^[13]
5. It is proven to help reduce stress and improve the mood.^[14]
6. It may help to reduce hot flashes, thereby minimizing the “Domino effect.”

Although no conclusive evidence was derived from randomized controlled trials on whether exercise is an effective treatment for reducing hot flushes and night sweats in menopausal women, the latest Cochrane review did find a weak trend for exercise to be more effective than no intervention.^[15]

GETTING STARTED

It is never too late to start exercising. The key is to start slowly and do things one enjoys such as walking, cycling, vigorous yard work, swimming, cardio machines or attending group fitness classes. Regular exercising can help in improving the overall wellbeing. Even moderate physical activity like simply moving the body enough to get the heart pumping brings great health benefits including more energy. The activity should be fast enough to get the heart pumping without being out of breath or exhausted.

To determine the maximum heart rate for exercise one has to subtract the woman’s age from 220. For the target heart rate range, multiply maximum heart rate by 50/100 and 80/100. When starting an exercise program, aim at the lowest part of the target zone (50 percent) during the first few weeks. Gradually build up to the higher part of the target zone (75 percent). After six months or more of regular exercise, one may be able to exercise comfortably at up to 85 percent of one’s maximum heart rate.

Women on antihypertensive drugs should be cautioned of the fact that few high blood pressure medications, especially beta blockers, lower the maximum heart rate and thus the target zone rate. Such women should consult their physicians to find out if they need to use a lower target heart rate.

The talk test provides a convenient alternative for tracking the exercise intensity. Moderate intensity exercise, for example walking at 3.5 mph, allows a woman to talk, but not sing and should not be breathless. During vigorous aerobic exercise, such as step aerobics, she should be able to speak a few words, but not carry on a conversation. The benefit of exercising at the target heart rate increases the fitness and conditions the lungs, heart, circulation, and muscles.

VARIETIES OF EXERCISES^[16]

Exercises that can help in building and maintaining the bone density and mass are as follows:

Weight bearing, high impact exercises: Includes dancing, high impact aerobics, running / jogging, jumping rope, stair climbing, and sports like tennis, basketball, volleyball or gymnastics. These are best for those who are not osteoporotic, not have low bone mass, and are not frail.

Weight bearing, low impact exercises: Are walking (treadmill/outside), elliptical training machines, stair step machines, and low impact aerobics. This group of exercises may be opted to build bones, by women who cannot do high impact exercises.

Weight or strength training or resistance training exercises: Include lifting weights, using elastic bands or weight machines for exercise, using simple functional movements such as standing or lifting the own body weight.

Nonweight bearing, nonimpact activities: Are cycling, swimming, stretching, and flexibility exercises. These should be included as components of a comprehensive exercise program. Alone these do not help building up the bones.

NonImpact exercises: Involve exercises that help in the balance posture and attitude, for example, T'ai Chi.

Menopause friendly exercise prescription: The exercise program for postmenopausal women should include, endurance exercise (aerobic), strength exercise, and balance exercise. Out of these aerobics, weight bearing, and resistance exercises are all effective in increasing the bone mineral density of the spine in postmenopausal women.^[17]

An effective exercise prescription may be resistance and weight bearing exercise three days a week (on alternate days). Care should be taken to do the exercise for all the muscle groups by rotation preferably with a trainer. Brisk walking at the speed of five to six kilometres per hour, cycling, treadmill, gardening or dancing may be done on the remaining days of the week.^[18]

Warming up beforehand can help to reduce exercise related injuries and pain following exercise. One should aim for two hours and 30 minutes of moderate aerobic activity each week. Other deep breathing, yoga, and stretching exercises can help to manage the stress of life and menopause-related symptoms.

STEPWISE APPROACH

Step 1: Stretch, walk on a treadmill for five minutes or go for a brisk walk to get ready for exercise. As owing to age, the body becomes less flexible, it is important to warm up the body before a work out.

Step 2: Engage in aerobic activity that elevates the heart rate and burns fat. Whether it is a dance class, aerobics class, going for a run or a bike ride, signing up for

kickboxing or taking time on an elliptical machine, each helps to benefit the large muscle groups and helps the cardiovascular function.

Step 3: Lift weights, use resistance bands or try body weight strength training in order to keep the bones strong. Menopause is a common time for women to experience a loss of bone density or osteoporosis. They have to aid in keeping their bones strong by keeping the muscles strong. Strength training also can help to rev up the decreasing metabolism and help in burning the fat, even while resting, to avoid the dreaded menopausal weight gain.

Step 4: Foster better flexibility by trying workouts that cause the stretching of muscles, such as yoga and Pilates. This can promote better muscle function. The woman must take time for yoga and meditating each night to reduce some of the anxiety that also is a common symptom of menopause.

Step 5: Cool down at the end of a workout by walking for a few minutes and stretching to relieve any pain as a side effect from a particularly gruelling workout. This gives the body a chance to relax and promotes regular breathing and a slowing of the heart rate as one finishes exercising for a healthy end to this menopausal friendly workout.

The best regimen^[19]

A regimen of twice a day calcium citrate supplementation (800 mg) and resistance training three times a week improves bone density in postmenopausal women, whether or not the women is taking estrogen. By taking simple steps including eating a balanced diet with plenty of calcium and Vitamin D, and engaging in weight bearing exercise, the risk of osteoporosis can be reduced in the typically vulnerable areas of the spine and hip using six core exercises:

1. Wall or smith squat
2. Lat pull down
3. Leg press
4. One arm military press
5. Seated row
6. Back extension

Description of a few important exercises is as follows:

The squat

The squat is one of the best ways to build and display raw strength. Slap a few plates of iron on the bar, put it across your shoulders, squat until the thighs are parallel to the ground, then stand back up. It sounds simple, but it is one of the most intense exercises there is for

increasing bone density. Although many casual lifters prefer a higher rep range, it turns out that alternating between moderate and heavy lifting of six to eight and four to six reps gives the biggest results.

Shoulder press

The shoulder press, lifting a barbell straight over your head, is another way to display impressive strength. The shoulder press is also one of the exercises that most increases bone density. Although doing shoulder presses with dumbbells helps to strengthen the stabilizer muscles. When one is trying to build bone density, weight is what matters most, so find a shoulder press station or a power cage and use a barbell.

Lat pull down

The lat pull down exercises the lats, biceps, and forearms. At the top of the movement, one should feel a good stretch in the lats, just under the arms. Once one gets strong enough, they may consider switching to pull ups, and even weighted pull ups.

Leg press

The leg press allows to test the true strength of the quads, hamstrings, glutes, and calves, without worrying about balance or the lower back. A lot of weight can be moved with this exercise, and that stress, results in an increase of bone mineral density.

Seated row

The seated row includes exercising the similar muscles to the lat pull-down, but also uses the lower back and glutes as stabilizers, and hits the traps. The key to performing this exercise safely is to not sway as one performs the movement. The *buttock* should lock the body into a comfortable angle at the hips, and that angle should not change.

In each session of workout at least seven to ten minutes of cardiovascular weight-bearing activity, such as weighted walking, stair climbing, and jogging, and small muscle group exercises involving thera-bands and physio-balls round out the study regimen. The key to achieving the goal of improved bone health is in the intensity of the weight-bearing workout and the level of the resistance training. Progressively increasing the weight lifted and consistently exercising two to three times a week are essential for success.

T'ai chi

This is the most commonly practiced balance exercise. T'ai Chi Ch'uan techniques are said to physically and energetically balance *yin* (receptive) and *yang* (active) principles: 'From ultimate softness comes ultimate

hardness.'

The core training involves two primary features: the first being the solo form, a slow sequence of movements that emphasize a straight spine, relaxed breathing, and a natural range of motion; the second being different styles of *pushing hands*, for training sensitivity in the reflexes through various motions from the forms, in concert with a training partner, in order to learn leverage, timing, coordination, and positioning, when interacting with another.

The participants are taught not to fight or resist an incoming force, but to meet it in softness and 'stick' to it, following its motion, while remaining in physical contact until the incoming force of attack exhausts itself or can be safely redirected the result of meeting yang with yin. Done correctly, achieving this yin/yang or yang/yin balance in combat (and, by extension, other areas of one's life) is the primary goal of T'ai Chi Ch'uan training. 'The soft and the pliable will defeat the hard and strong.' There is also an emphasis in the traditional schools on kindheartedness. One is expected to show mercy to one's opponents.

T'ai chi training may help those suffering from osteoarthritis by strengthening the joint musculature and increasing the range of motion and flexibility, and may be used as an adjunct to the standard treatment.^[20]

Impact of exercise on bone mineral density

Bones become strong when the muscles attached to them become strong. Bone changes are slow, much slower than strength changes. If high load and low rep routines of compound exercises are used, these stimulate muscle development around the hips, spine, and arms, building bone strength in those vulnerable areas and throughout the body. Even if the BMD is not improved as measured by the dexascan, resistance training with adequate intensity will dramatically lower the lifetime fracture risk.

The maximal load is most relevant in BMD changes, not the load frequency. A small number of loading cycles work best. The trabecular bone of the spine remodels more rapidly than the cortical bones of the hip and wrist.^[21,23] The intensity with which the exercise is performed bears a direct correlation to the increase in the BMD.^[24] It can take four to six months or more for the bone to remodel under the best conditions, and the measurable effects of exercise may only be apparent years later.^[25] On the other hand BMD increases have been reported using just five resistance exercises, hip extension, knee extension, lateral pull-down, back

extension, and abdominal flexion (3 x 8 at 80% 1RM) twice a week for one year.^[26]

In India, the Indian Council of Medical Research (ICMR) has reported a significant centerwise difference in BMD.^[27] The paradox of lower fracture rates among the IndoAsian population than those in caucasian women, despite lower skeletal mass at maturity in the former group, has also been noted.^[28] This has led to the suggestion of the potential need of measuring bone mineral apparent density (BMAD) in Indian Women.^[29]

What not to do

Although all postmenopausal women should be encouraged to employ lifestyle practices including appropriate exercises that reduce the risk of bone loss and osteoporotic fractures, these exercises for women with osteoporosis should not include high-impact aerobics or activities in which a fall is likely, such as exercising on slippery floors or step aerobics. Activities requiring repeated or resisted trunk flexion, such as sit-ups or toe touches, should also be avoided because of the increased loads placed on the spine during such activities that may result in spine fracture.^[30]

Another factor for consideration is when to stop exercising? This is indeed a warning to all the women. Senior women should know how to read the signs of their body. One should make it a point not to ignore the signals of overwork, which may lead to major issues like heart attack and injury. If there is any problem while exercising, it is better to stop exercising and change the exercises. Care should also be taken not to practice excessive exercise without adequate caloric and protein intake.

When should they avoid exercise? Certain medical conditions absolutely negate exercise. These conditions include:

- Recent electrocardiogram changes or recent myocardial infarction
- Uncontrolled arrhythmia
- Unstable angina
- Third degree heart block
- Acute progressive heart failure

There are other conditions that would contraindicate exercise on a case by-case basis, and should not be done unless there is medical approval. These conditions include:

- Elevated blood pressure
- Cardiomyopathy

- Valvular heart disease
- Complex ventricular ectopy
- Uncontrolled metabolic disease.

CONCLUSION

Women can enjoy a good quality of life after menopause even without hormones. Research indicates that postmenopausal women who engage in the comprehensive exercise program, benefit by maintaining a healthy body, bone density levels, and good mental health. Osteoporosis, the greatest ailment in older women, can be kept under control with exercise. Even a moderate exercise schedule can not only keep the weight in check, but it also lowers the risk of stress, anxiety, and depression, all of which tend to show up liberally during and beyond menopause. Exercise works by improving muscle mass, strength, balance, and coordination. Therefore, unlike treatment with medicine, exercises work simultaneously on various aspects of one's health. The role of exercise in hot flashes, however, remains inconclusive.

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